VOL. LXXXI PART FOUR

JOURNAL OF THE ROYAL HORTICULTURAL SOCIETY

APRIL 1956

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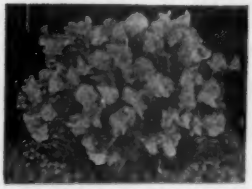

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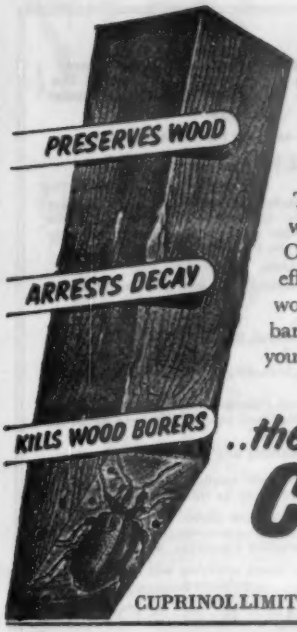

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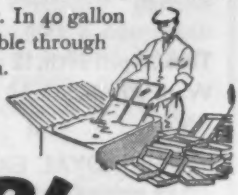

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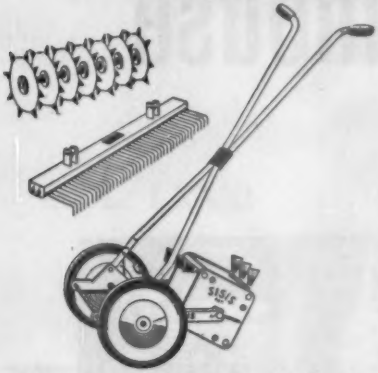

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JOURNAL OF THE ROYAL HORTICULTURAL SOCIETY

VOL. LXXXI PART FOUR

April 1956

THE SECRETARY'S PAGE

ANNOUNCEMENTS—APRIL AND MAY

Shows

TUESDAY, April 17 12.30 P.M. to 6 P.M. WEDNESDAY, April 18 10 A.M. to 5 P.M.	Fortnightly Flower Show. Daffodil Show. Camellia Competition. Sewell Medal Alpine-house and Rock-garden Plant Competition for Horticultural Traders.
TUESDAY, May 1 12.30 P.M. to 6 P.M. WEDNESDAY, May 2 10 A.M. to 5 P.M.	Fortnightly Flower Show. Rhododendron Show. National Rose Society's Competition. National Auricula and Primula Society's Competition. (May 2 only.)

Chelsea Show

TUESDAY, May 22—(Private View) 2 P.M. to 8 P.M.
WEDNESDAY, May 23—8.30 A.M. to 8 P.M.
THURSDAY, May 24—8.30 A.M. to 8 P.M.
FRIDAY, May 25—8.30 A.M. to 5 P.M.

Particulars of the availability of Fellows' and Associates' tickets are given on the tickets.

Lectures

TUESDAY, April 17, at 3 P.M. Masters Memorial Lecture, "The Improvement of Strains of Vegetables," Part II, by MONSIEUR R. L. DE VILMORIN, D. ès SC.

TUESDAY, May 1, at 3 P.M. "Rhododendrons and Camellias at Leonardslee," by SIR GILES LODER, BT.

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TUESDAY, May 1, at 3 P.M. "Rhododendrons and Camellias at Leonardslee," by SIR GILES LODER, BT.

Demonstration at Wisley—The following demonstration will be given at Wisley:

MAY 16–17. The Summer Pruning of Shrubs.

The demonstration will commence at 2 P.M. each day.

Lily Group Meeting—The Lily Group will hold its first meeting of the year in the Restaurant of the Old Hall at 4 P.M. on Tuesday, April 17, when there will be a discussion on The Raising of Lilies from Seed.

Camellia Competition—The annual Camellia Competition will be held in conjunction with the Fortnightly Show on April 17 and 18. The Schedule, which may be obtained on application to the Secretary, is similar to that for last year's Competition but attention is drawn to the following changes:

The value of the prizes in Class 74, which calls for six sprays, has been raised.

The maximum height of the plants called for in Classes 81 and 82 has been raised from 36 inches to 48 inches.

A silver trophy, provided from a fund established by MR. RALPH S. PEER, is offered for award for the most meritorious exhibit in the competitive classes.

Rhododendron Show—The annual Rhododendron Show will be held in conjunction with the Fortnightly Show on May 1 and 2. The Schedule, which may be obtained on application to the Secretary, contains three new classes, viz.:

The Lionel de Rothschild Challenge Cup Class, which is open to all and calls for a group of plants and/or cut blooms; and Classes 3 and 63, which call for three species and three hybrids respectively, and are open only to those who have not won a prize in similar or more difficult classes during the last five years.

The Restaurant at Wisley—The Restaurant in the Gardens will be open until October 14. Times of opening will be as follows:

Weekdays: 10.30 A.M. to 6 P.M. (or sunset, whichever is the earlier).

Sundays: 2 P.M. to 5.30 P.M. (to last Sunday in September).
2 P.M. to 4.30 P.M. (Sundays, October 7 and 14).

The restaurant will provide a cafeteria service of cold lunches, sandwiches, cakes, tea, coffee and other light refreshments. There will also be a waitress service for hot lunches. Reservations by parties for lunches or teas may only be made on days other than Saturdays or Sundays; organizers should make arrangements, not with the Society, but direct with the caterer, MRS. D. BADCOCK, at Oak Cottage, Shere, nr. Godalming, Surrey (Tel. Shere 168).

Picnicking is not allowed in the Gardens.

Report of the Annual General Meeting—This has been postponed till the May issue owing to the late date on which it was held, and to other factors outside our control.

Wisley Facilities—A small kiosk is being opened nearly opposite to the main entrance to the Gardens, at which post-cards, etc., of Wisley can be bought. An exit turnstile has now been provided for the use of visitors to the Gardens, to the north of the Laboratory, which will enable visitors to reach the car park easily. The car park has been considerably extended since last season.

The Offices in Vincent Square—The offices in Vincent Square will be closed from 1.0 P.M., March 29, to Wednesday, April 4, inclusive. The offices will be open on Whit Monday, May 21.

NOTES FROM WISLEY

J. B. Paton

THE discussion in March centred round the Alpine House and so in April it is natural to turn to the Rock Garden. During the winter slight alterations have been carried out. Visitors will have noted that the grass path leading from the Alpine House to the Rock Garden becomes very worn and so, instead of the yearly replacement of the grass, an area between the top of the steps leading to the Rock Garden and the hedge of *Chamaecyparis lawsoniana* has been paved. On the south side of the top path of the Rock Garden there is jutting out a large rock which retained the soil in which was placed a plant of *Euonymus fortunei colorata*. This evergreen shrub and a large quantity of soil have been removed. New compost, some twenty barrow-loads, was put into the hole behind the rock and the area has now been planted up with evergreen azaleas. The crevices between this large rock and its neighbours are planted with the Pyrenean *Ramonda myconi*. This beautiful rosette plant appreciates this north-facing slope with well-drained peaty soil. Also to be seen in this area are *Oxalis rosea*, one of the plants known in gardens under the name of *O. floribunda*, and *Antirrhinum asarina* a hoary procumbent plant which also likes being planted in the crevices between rocks. This last plant flowers intermittently throughout the summer. The path down the west side of the Rock Garden has been repaved this winter and the border on its west side is to be constructed before the spring arrives, making a series of new pockets. On the eastern side of this path is a plant of *Picea glauca conica*, often listed as *P. albertiana conica*, which has grown into a fine slightly round-topped pyramidal specimen at the moment about 8 feet high and 4 feet across at the base. It originates from the Canadian Rockies and it was first grown at Kew from material sent by the Arnold Arboretum.

Most of the Rock Garden has had a top dressing of compost this winter. The compost consisted of two parts sterilized loam, two parts peat and one part sand to which was added a small quantity of bone meal. This may sound an easy routine job, but in actual fact there is

quite a lot of work as the greater part of the Rock Garden cannot be reached by a barrow and so the compost has to be carried in buckets. Another job completed in the autumn was lifting and replanting the beds along the edges of the long ponds. These beds have now been planted with varieties of *Iris kaempferi*, *I. sibirica* and *I. versicolor*, between which have been placed *Primula japonica* and *P. pulverulenta*. Along the water's edge the yellow-flowered *Caltha palustris* is very much at home as it can get its roots into the water.

A replanting operation which is best carried out in the spring is lifting and dividing the long-rooted gentians such as *sino-ornata* and *farreri*. When replanting at Wisley we use a very light compost and place the single thongs 2–3 inches apart. The hybrid between these two species, *G.* × *macaulayi*, also benefits from this treatment, but at Wisley it is only lifted when it has become overcrowded.

There is now quite a collection of the dwarf-growing rhododendrons on the Rock Garden and in late March and early April both 'Cilpinense' and 'Praecox' are at their best. Both are hybrids from *R. ciliatum*; the pink-flowered 'Cilpinense' being a hybrid with *R. moupinense* and the rosy-lilac 'Praecox' with *R. dauricum*. Two species flowering in April are *R. repens* with scarlet tubular flowers and *R. hemitrichotum* with pale rose funnel-shaped corollas. To be seen later in the month at the top of the Rock Garden is a fine plant of the pale rose hybrid between *R. orbiculare* and *R. williamsianum* which is known under the name 'Temple Belle.'

By April we may expect the early-flowering primulas such as *P. edgeworthii*, *P. gracilipes* and *P. scapigera* to be past their best and shall look for some of the other species in the various pockets. *P. marginata* is a sun-lover which comes from the Maritime Alps, where it is found growing on cliffs and ledges. It makes a shrubby growth of rosettes, each one composed of slightly serrated, white margined leaves. The pleasantly scented flowers are a shade of lilac-blue. Down the Alpine Meadow runs the bed of an old stream which is now planted with *P. rosea*, a Himalayan plant which likes plenty of moisture at its roots. In the beds round the Alpine House are planted some primulas of which there is insufficient stock to put in the Rock Garden. One of these is *P. frondosa* which has rose-coloured flowers tinged with lilac and purple. Also to be seen in these pockets are the blue-flowered American *Synthyris reniformis*, the shrubby cream-coloured European *Polygala chamaebuxus* and *Cheiranthus* 'Harpur Crewe,' a good form of *C. cheiri* with double golden-yellow flowers. *Pulsatilla halleri* and the handsome form with rich purple flowers known under the name *slavica* are also planted here. On the Rock Garden there is *P. vulgaris* 'Grandis' a Central European form of the native Pasque Flower. These last four plants are all equally at home on a lime-containing soil. *Daphne blagayana*, however, requires an acidic moist, but well-drained, soil. This evergreen low-growing shrub produces dense terminal heads of fragrant creamy-white, tubular-shaped flowers.

No rock garden would be complete without the inclusion of bulbous plants. Two daffodils of recent introduction are MR. COLEMAN's hybrids, *Narcissus* 'Charity May' and *N.* 'Dove Wings.' These were produced as the result of crossing *N. cyclamineus* with *N.* 'Mitylene' and they have both inherited the reflexed perianth segments of *cyclamineus*. 'Charity May' is canary yellow and 'Dove Wings' has a sulphury-white perianth and a primrose-yellow chalice-shaped corona. The bold drifts of *N. bulbocodium* in the Alpine Meadow need no introduction. In flower at the same time along the edge of the ponds is *Lysichitum americanum* with 6–10 inch-long pale yellow spathes. Of the family Liliaceae we may note the green-flowered *Gagea sylvatica*, the cream, purple-tinged *Erythronium revolutum* and the deep yellow *E. tuolumnense*. Near the Alpine House a collection of tulips is planted. It consists of hybrids of *T. kaufmanniana* with *T. greigii* and *T. fosteriana*. There is increasing interest in these hybrids on account of their early free-flowering habit and the bright colours.

Visitors who are able to come during working hours in April (7.30 A.M.–5 P.M. Monday to Friday and 7.30 A.M.–12 NOON Saturday) should also visit the Vegetable Trial Grounds as there will be found in progress several interesting trials. A new venture is the trials of vegetables under Dutch lights and continuous cold frames. During this month a large trial of seventy-three varieties of lettuce should be reaching maturity. The ground was dug in early autumn incorporating a heavy dressing of well-rotted farmyard manure. The seed was sown on October 11, 1955, the seedlings pricked out 2 inches by 2 inches on November 5 and the young plants moved to their final quarters on December 12. A second sowing was made a fortnight later in case the plants resulting from the first sowing grew too fast. Planting before Christmas enables the plants to become well established before the onset of bad weather usually associated with late January. Other points noted during the cultivation of this trial are the importance of growing the plants as sturdy as possible with air being admitted to the frame at every opportunity and the use of the fingers to plant the young seedlings. A dibber is not advocated as it is so easy to damage the plants and any damage opens up the way for the entry of *Botrytis cinerea*. In very severe weather it has been necessary to cover the frames and lights with a thick layer of straw to prevent the plants freezing. However this straw was removed daily to allow the frames to be aired. Certain difficulties in the seedling stage were encountered with worm casts and so before planting the ground was dressed with derris dust. Also maturing during April are the trials of sprouting broccoli and kale. These trials were rather severely damaged by two hard frosts in late October, but in mid February it appeared likely that they would produce a reasonable crop.*

* The prolonged cold weather of February appears to have killed completely the plants in the trial of sprouting broccoli and to have injured severely the plants in the trial of kale, so that it is unlikely that these two trials will be in a fit condition to judge this April.

Also of interest at this season are the Daffodil trials. This year in addition to the standard collection there will be flowering some of the newer English and Dutch varieties which have now been in the ground for two years.

PLANTS OF INTEREST AT WISLEY DURING APRIL

GLASSHOUSES

Buddleia asiatica
Callistemon speciosus
Clivia hybrids
Coleus thrysoideus
Hibbertia dentata
Rehmannia angulata
Strelitzia reginae

AWARD OF GARDEN MERIT COLLECTION

Corylopsis pauciflora
Forsythia × *intermedia spectabilis*
Malus floribunda
Primula rosea
Prunus incisa
Ulex europaeus var. *plenus*

WILD GARDEN

Anemone apennina
„ *nemorosa*
Camellias in variety
Corylopsis willmottiae
Enkianthus perulatus
Magnolias in variety
Primulas in variety
Rhododendrons in variety
Shortia uniflora var. *grandiflora*
Soldanella montana
Trillium sessile

SEVEN ACRES

Barberries in variety
Daffodils in variety
Forsythia suspensa
Osmanthus delavayi
Prunus pilosiuscula
Viburnum × *burkwoodii*
„ 'Park Farm Hybrid'

ROCK GARDEN AND ALPINE HOUSE

Androsace pyrenaica
Cardamine trifolia
Cassiope lycopodioides
„ *tetragona*
Cytisus × *kewensis*
Douglasia laevigata
Lewisias in variety
Lysichitum camtschatcense
Primulas in variety
Prunus subhirtella var. *pendula*
Rhododendrons in variety

WEATHER HILL

Flowering Cherries
„ Crabs

BATTLESTON HILL

Amelanchier bartramiana
Camellias in variety
Flowering Cherries
Kurume Azaleas
Magnolias in variety
Pieris forrestii
Rhododendrons in variety

AGAPANTHUS

The Hon. Lewis Palmer, F.L.S., V.M.H.

(*Lecture given on September* 20, 1955; SIR GILES LODER, BT., *in the Chair*)

I HAVE selected *Agapanthus* as the subject of my talk this afternoon, because I have in recent years become deeply interested in the study of this beautiful genus. Like *Camellia* at an earlier period, it has suffered in popularity through being considered a proper subject for the greenhouse or, at best, one to be grown in a tub and moved under cover in the winter. In fact, the hardy agapanthuses are perfectly hardy in the British Isles. I have had them in the open ground now for eight years and they have suffered up to thirty degrees of frost in my garden without turning a hair (Fig. 45). I hope, therefore, to be able to persuade many Fellows to try them in their gardens, and I am sure they will have success if they will give them a sunny, well-drained position and not disturb their roots by digging in the autumn and winter.

I should now like to go back and explain what first roused my interest in this genus. When I first began to observe the agapanthuses I saw in various gardens, it appeared that there were two types, one of which had broad leaves and large heads of flowers, which was usually called *A. umbellatus* and grown in tubs, and the other, which had narrow leaves and smaller heads of flowers, which was called *A. mooreanus*, or the hardy agapanthus, and was usually grown in the open ground, or in a warm border under a wall. Nobody seemed very sure of the names, nor could tell me from whereabouts in South Africa they came; so I determined to find out for myself. The result was rather surprising; neither *A. umbellatus* nor *A. mooreanus* exists in a botanical sense; that is to say that neither name has ever been validly attached to a species found growing wild. In fact, as I soon began to discover, both names had been used for a bewildering variety of plants.

It is not my purpose to bore you with a lot of names of species of *Agapanthus*, because it is the hybrids I really want to talk about, but for those that are interested, there is here a set of plates of the species, made by MISS BARKER of the Kirstenbosch Herbarium. A short paper on the nomenclature of *Agapanthus* can be found in JOURNAL R.H.S., **79**, p. 25. Suffice it to say now that the genus *Agapanthus* is confined in nature to Africa south of the Limpopo river, that is, the Union of South Africa and the Protectorates of Basutoland and Swaziland. There exist probably some twenty different species, of which only about thirteen have hitherto been properly described and named.

There are some half-dozen species native to different stretches of the coastal region between Cape Town and Durban. This region is low-lying, near the sea, and enjoys a climate free from frost, and the species of *Agapanthus* native to it cannot be considered hardy in this country, except in the extreme south and west. Of these species the best-known

are *A. africanus*, from the region round Cape Town, which was the first species to be introduced into Europe, and *A. orientalis*, from the region between East London and Durban, which is the plant usually, but erroneously, known under the name of *A. umbellatus*, and is the plant commonly grown in tubs in this country, and in the open in most warm temperate gardens. These non-hardy species are evergreens and keep their foliage all the year round.

The remaining species are natives of the mountains or the high veldt, where hard frosts are experienced in winter, and they behave in a different manner in that their leaves turn yellow and die down in the autumn, and the root lies dormant until the spring. I think that it is highly probable that the original plant sent to SIR FREDERICK MOORE, and called *A. mooreanus* by the sender, was one of those species, but it is now, alas, impossible to identify it.

From the horticultural point of view the *Agapanthus* species fall into two types. In the one the individual flowers have a wide open mouth and are held in stiff panicles in a roughly hemispherical head. In the other the flowers are long and tubular and are at first held upright but as they open the pedicels turn through a half circle and the open flowers hang down beside the main stalk. This gives the flower-head sometimes a rather untidy mop-like appearance, but in other individuals it can have a very graceful, pleasing effect.

Now agapanthuses have a characteristic in common with berberises, and that is that where two or three species are gathered together, a bewildering variety of hybrids will arise. When I first wished to get some of the *Agapanthus* species from South Africa, Kirstenbosch were kind enough to send me a number of packets of seed from the various species growing in the National Botanic Gardens. But, as in most botanic gardens, the collection of species at Kirstenbosch is grown next to each other. From this seed I raised some 300 plants, which I carefully labelled according to the name on the seed packet. They are very fine garden plants; but in the whole lot I would not venture to state that one single one was the legitimate child of its mother. What I have got is a tremendous variety of hybrids. These hybrids only differ from the group of hybrids that are generally obtainable under the name of *A. mooreanus*, in that they have, perhaps, a greater number of species in their makeup and, therefore, exhibit a greater variation, and in the fact that the greater part of these seem to be semi-evergreen in habit. Of my hybrids a few conserve the deciduous habit of their hardy upland ancestors, and the leaves die down in autumn; but most of them seem to have inherited in some measure the evergreen habit of their lowland ancestors, in that their leaves remain active until they are cut down by the frost, after which they look most unhappy and, I must admit, unsightly, for a period in the winter. But they have inherited enough of the stamina of their upland parents not to take any serious damage from this frosting, and they come up next season as vigorous as ever and flower profusely. I do not remove the unsightly frosted

foliage as it acts as a protective cover for the plant, but I find I can distract the eye from it by planting early spring bulbs, such as scillas and snowdrops, among the agapanthus.

These hybrids vary in colour from indigo-violet through all shades of blue to white; and in stature from 4 feet 6 inches to 1 foot. The broadest leaves are 2 inches broad and the narrowest under ½ inch. The number of flowers in a head varies from about one hundred to under twenty. Some have wide, open flowers, some have flowers almost tubular in form and hanging down on their stalks. Some commence flowering about the third week in July, while others, perhaps too late for most English gardens, do not flower till late in September or early October. But all are beautiful and they provide a long succession of blue flowers at a time when blue flowers are not too plentiful.

Their cultivation presents no difficulty provided one can give them a sunny position in rather poor soil which remains reasonably dry in winter. They seem to flourish on both sand and chalk and will probably grow in any soil except perhaps a heavy, impervious, waterlogged clay. They cannot endure being waterlogged in winter or having their roots frozen. In summer they seem to benefit by having a few flat stones or slates put round them to conserve the moisture on the soil, and in winter a covering of bracken or peat helps to keep the frost off their roots and provides a mulch which they certainly appreciate in the following summer. It is as well to remember that the agapanthus does not have a bulb. It has a short rhizome, rather like that of an iris, from which arises an enormous bird's nest of thick, white, fleshy roots, which penetrate into the ground to a considerable depth and for quite a distance round the plant. They hate having these roots disturbed, especially in winter, which makes them unsuitable subjects for any position where autumn or winter digging is necessary. Unlike irises, they do not require dividing at intervals, and are happiest if left severely alone. They can be propagated either by division in the spring, when the new leaves are beginning to appear, or by seed. Personally, unless I wish to multiply a particular plant, I prefer to raise them from seed. I have not developed any satisfactory technique for pollinating agapanthuses and so I take my chance and collect the seed as pollinated by the bees, who, incidentally, do the job very thoroughly.

I sow the seed thinly in 5-inch pots in the early spring in a cold greenhouse. The seedlings remain in these pots for the first year. In the spring of the second year they are potted off singly and put in a frame. They should then be constantly watered and potted on at frequent intervals. This is important because they make tremendous root growth during their second year, and if allowed to get pot-bound they will receive a check. They spend their second winter in an ordinary cold frame, and go out into their permanent positions in the garden in the late spring of their third year. I have had seedlings throw up their first flower while in pots in the frame, that is, in their second year, but about 50 per cent. will flower in their third year.

One should remember that, owing to the fact that these hybrids have got non-hardy species among their ancestors, a certain number of the seedlings will inherit too high a proportion of non-hardy blood, and will perish in their first winter in the open ground: but the few gaps thus caused are easily filled in, and the remainder will go on from strength to strength. I have a plant now in its seventh year from seed that gave me over forty spikes of flower this year. I have also found the agapanthus a suitable subject to grow in front of a shrub border or a hedge, where the green background will show off its graceful tall blue scapes to perfection.

I have talked mainly about the flowers of agapanthuses but before I conclude I want to put in a word about their leaves. The foliage is very luxuriant, even more so than that of *Hemerocallis* and of many differing shades of green. The leaves hold themselves upright and do not flop, which is a fault to which day lily leaves are prone, nor do they fade at the tip or develop unsightly spots or blotches. In fact until the time comes for them to die down or be frosted they are always fresh and pleasing in appearance.

THE CHOICE AND CARE OF TREES FOR THE SMALL GARDEN

F. P. Knight, F.L.S.
(*Director, R.H.S. Gardens, Wisley*)

(*Lecture given on October* 18, 1955; THE HON. LEWIS PALMER, F.L.S., V.M.H., *in the Chair*)

THE picture I have in mind of a small garden is not one prompted by thinking of any particular area, but rather of a garden which can reasonably be maintained by the occupier and his family with the help at the most of a part-time, single-handed gardener.

The design of a garden can be such that a larger area can more easily be cared for than a smaller one, particularly if the former tends towards the informal in layout and the latter is made up mainly of formal beds and borders with the ever-attendant necessity for maintaining the edges of lawns which surround these. If, however, I am called upon to be more precise I would say that any plot exceeding one acre which is cultivated for ornamental purposes would not come within the scope of my title.

In making a choice of suitable trees I must draw from the many years' experience I have had in planting new gardens. This has resulted in making it quite clear to me that the subject often resolves itself into a question of the age group of the occupants. Those who start gardening when they are young take up quite a different attitude towards tree

planting than those who plant a garden when they retire from active work and settle down.

The young select trees which will grow as they grow in years and generally take care that the trees will not outgrow their positions in less than thirty or forty years. The older ones want a ready effect and, therefore, are not so much influenced by thinking about the eventual dimensions of the trees. I have lost count of the times I have been asked to plant a tree on the lawn "under which we can sit in two or three years' time."

The choice for younger people is much more restricted than for the older and it is mainly of them that I think when I consider planting a treeless plot. When, however, I eventually come to making a list of trees, this will comprise those which can also be planted where there is room in established gardens.

Nowadays there are numerous new houses being built and I often think how much more attractive and trouble-free gardens could become if neighbours would consult beforehand about the choice and siting of their trees. All too often trees on one side of a boundary fence or hedge compete with those on the other side, whereas two gardens planted as a result of joint planning can provide a satisfying picture. This co-operation may also be responsible in the long run in avoiding any unpleasantness between neighbours about overhanging trees, and to carry this idea a step further may also obviate the necessity of taking legal advice on lopping encroaching branches. I have seen attractive tree planting schemes where the design for the gardens on building estates was planned as a whole and the choice of the trees not left to individuals. The flat and monotonous appearance which results when several bungalows are built together can be relieved by planting a number of carefully sited fastigiate and pyramid-shaped trees.

TECHNICAL DESCRIPTIVE TERMS

Certain descriptive terms are used for trees and I find among laymen a good deal of confusion exists regarding these. It is essential when considering the choice of trees to understand the following terms:

DECIDUOUS. A tree which loses its leaves annually, e.g. elm.

EVERGREEN. A tree which has green leaves throughout the year, e.g. holly.

CONIFEROUS. Cone-bearing trees, evergreen, e.g. pine, cedar, or deciduous, e.g. larch.

FASTIGIATE. The branches grow nearly parallel upwards.

WEEPING. The branches are pendulous in growth.

PYRAMIDAL. The outline is shaped like a pyramid.

STANDARD. A tree having a clean trunk measuring at least 5 feet 6 inches from ground level to the first branch.

HALF-STANDARD. With a clean trunk measuring about 4 feet from ground level to the first branch.

FEATHERED TREE. A young tree being grown into a standard which still retains side branches on the main trunk.

BUSH TREE. This may branch into two or more main branches from near ground level, or may have a short clean trunk of about 2 feet before branching. In the latter case it is sometimes referred to as a "bush tree on a leg."

WORKED TREE. This means the tree has been propagated by being budded or grafted (worked) on to a root stock.

BOTTOM WORKED. Grafted or budded on the stock just above ground level.

TOP WORKED. Grafted or budded on the top of a specially grown stem.

BALLED. Where a tree is transplanted with a ball of soil adhering to its roots, and is usually despatched by nurserymen with sacking or similar material wrapped around the ball of soil.

BARE ROOTED. Simply means that the tree is despatched from the nursery without soil adhering.

HEAD. Usually refers to the branches collectively on a standard or half-standard tree. The "diameter of head" is sometimes given in a price quotation. This means the distance through the head of branches and in cases of expensive specimen trees may be given by measuring through the centre in two directions.

LEADER. The leading branch which in a well-grown tree is usually that which develops as a direct elongation of the growth of the trunk.

DOUBLE LEADER. Where two competing leading branches are developed.

LATERAL. A branch which grows sideways from the leader.

* * *

SELECTING TREES FOR PLANTING

As a general rule I would not consider it necessary to visit nurseries to make a selection of individual trees which are in plentiful supply. These may be obtained by referring to catalogues, which usually contain particulars based on the descriptive terms I have given. If, however, it is essential to plant trees of particular shapes or unusual sizes I would strongly advise making an appointment with a nurseryman in order to make a personal choice. Some nurseries cater for the transplanting of large specimen trees to give a ready-made effect and are especially equipped for the work involved. Normally, flowering ornamental standard deciduous trees are supplied about 8 to 10 feet overall in height. The age of trees of this size will vary a little in accordance with the varieties, but is normally four to five years.

CARE OF TREES

Time of Planting. Deciduous trees may be safely transplanted during open weather and given suitable ground conditions this may be at any time between late October and the end of March. Evergreens, however,

are normally handled during October and early November and from early March to the end of April. I disagree with some writers who advise transplanting evergreen trees in May in so far as despatch from a nursery is concerned. It is quite easy to move an evergreen tree in early May from one site to another within a garden where the whole work can be completed in a few hours, but it is quite another problem when lifting similar trees in a nursery and packing these for rail delivery. In the latter case the trees may be out of ground for several days and even when well packed there is a danger of the foliage becoming "heated" and discoloured during transit. Evergreens planted in the spring will benefit by being sprayed with water overhead preferably in the evenings or early mornings during dry weather.

Trees and Frost. Trees from nurseries are often packed in skilfully made straw bundles and it can and does happen that occasionally a consignment reaches the purchaser during a spell of frosty weather which renders immediate planting impossible. It is not that the nurseryman deliberately despatches trees during frosty weather, but the weather can change between the times of despatch and receipt. If from one's knowledge of weather conditions it is felt that the frosty spell is of short duration it is only necessary to leave the bundle as received in a shed or a sheltered position. If, however, the frost continues the bundle should be kept in a sheltered place, but the straw around the head of branches could be loosened. I have found there is a tendency for amateur planters to become over-anxious about the state of their new trees and some reassurance may come to them from the fact that I have known trees to be left in their straw packing for six weeks without suffering any harmful effects. A crust of frozen ground which is easily broken by a spade can be removed and planting undertaken with safety.

GROUND PREPARATION AND PLANTING

Where trees are to be planted in individually prepared holes, e.g. on a lawn, I would advise for the ordinary-sized specimens that the holes are excavated at least 2 feet deep and not less than 4 feet in diameter. The method of marking out a neat circle on a lawn is simply that of driving in a central peg and looping around this a length of string equal to the radius and at the free end of this to fasten a pointed stick which will scratch a mark on the turf. The turf is then cut through by following around the mark with a spade. A very useful tip to protect a good lawn is to spread on this an adequate sized square of sacking on to which the excavated soil is placed. The top soil and subsoil should be kept apart on the sacking. The bottom of the hole should be broken up with a fork and the turf chopped up and placed on the roughened surface thus obtained. For standard and half-standard trees a suitable tree stake should be driven in before planting the tree. The sides of the hole should be pierced with a fork, particularly if the soil is heavy. This prevents the formation of a simple pot-hole. In wet conditions it is necessary to place brickbats or coarse weathered clinkers in the bottom

of the holes for drainage purposes. In extreme cases I have known it necessary to drain individual planting holes with land drains.

No general formula can be given about improving the soil, but when this is of poor quality some humus in the form of compost, spent hops, or old, well-rotted farmyard manure can be added. I strongly advise against filling in the holes with a rich spongy mixture of soil, as not only does this tend to form a sump, but results in the quick development of lush leafy growth. It is far better to feed the trees by mulching after a satisfactory new root system has been established. The tree to be planted should be arranged in the hole against the stake. I almost invariably find that there is a tendency for trees to have a "back and front" and this becomes evident when placing the tree to the best advantage for fastening to the tree stake. I would forget about using sacking and string for this purpose and use one of the efficient tree ties which are now available. It is vital that in arranging the tree to be planted it should not be placed too deeply in the hole. A soil line will be seen on the base of the trunk and this should give the depth of planting. More trees die after transplanting because they are buried too deeply than for any other reason. I have heard it argued that it is essential to plant trees with the same orientation of the branches and trunk that prevailed in the positions previously occupied, but I have never been influenced by this and cannot remember any ill after-effect. I think, however, that the sudden exposure to strong sunlight of the trunk of a tree which has been growing for a long time in the shade of a thicket could produce harmful results. The roots of the tree should be spread out and any sizeable roots damaged in lifting should have the ragged ends cut cleanly with a sharp knife.

The soil which was excavated and kept in separate heaps on the sacking should now be replaced around the roots of the tree. I usually mix some of the sub-soil with the top soil and make certain that the texture is such that fine particles are available to fill in between the roots. The soil should be firmed as it is replaced by treading and this must be done layer by layer and not simply attempted when all is replaced. Care must be taken to eliminate air pockets. It will usually be found that by reason of bulkage there will be surplus soil and this is where the wisdom of spreading the sacking is shown; simply gather together the four corners and tip the soil into a wheelbarrow. On no account should it be mounded up around the base of the trunk, as this tends to bring the tree roots up towards the surface where they become dried out and are liable to damage during cultivating operations. In a wet position planting on a raised mound is, of course, permissible. After a few years it is sometimes necessary to enlarge the original planting circle by excavating the soil for an additional two feet or so around the edge of the holes. This should be done during the normal planting season. To avoid making unsightly holes the turf can be replaced to cover the extended area. Established trees on lawns which are obviously not thriving can often be restored to health by boring holes

in the ground about 1 foot in depth and 2 feet apart over the area occupied by the roots and dropping into each hole an ounce of coarse bone meal mixed with soil. Bone meal can also be used with advantage when planting.

I have described at considerable length the procedure for tree planting in individual holes and the alternative is that of incorporating trees in a planting scheme for a large bed or border or boundary screen. It is usual in such cases to prepare the ground by double digging, and simply excavating deeper where the trees are sited. Because of the expanse of cultivated ground providing free root-run the trees tend to make more satisfactory growth.

Spacing of Trees. No general rule can be followed, but where planting several trees is desirable along the boundary I would advise planting 15 to 20 feet apart. The same minimum should be observed for grouping on a lawn.

Pruning. The pruning of trees planted in small gardens could easily form the subject of a special talk, but here let it suffice to say there are certain general rules which should be followed. First of all, the all-too-prevalent idea that pruning time must come around every year should be abolished or considerably modified. Ornamental trees do not require annual pruning. When they are received as vigorous young specimens from a nursery they have by skilful training already developed their basic framework of branches. From then onwards, dependent upon whether it is the nature of the various trees to grow into upright or round-headed specimens, the system of pruning will be that of encouraging the growth of a "leader" or to keep a balance to prevent overcrowding among the branches which will radiate outwards from the centre of the tree. Branches which cross each other in growth should be dealt with by cutting out those which are hampering development. Avoid at all costs giving the trees a "hair cut" by shortening the ends of numerous small branches. I am a firm believer in replacement pruning and it will soon be noticed by the observant that where trees tend to overgrow their positions it is possible to retain the general shape of these by cutting back the larger branches and leaving in secondary ones growing in the same general direction. This is more easily demonstrated than written about. The removal of sizeable branches, say of an inch or more in thickness, is all too often seen as mutilation instead of a skilful amputation. It is essential that such branches should not be cut off so that a ragged end or snag is left, but they should be cleanly cut away at the point where they join the main branch. The cut sawn surface must be smoothed off and treated by painting with white lead paint, or a similar antiseptic, which prevents the entry of fungus spores. Deciduous trees are usually pruned after leaf fall and evergreens in the spring just before new growth starts.

Snow Damage. The lodging of snow on the branches of trees causes considerable damage and many shapely evergreens may not regain their original outline. Much can be done by being prepared for snowfall by

keeping a long, stout, forked stick, which is used to shake the branches and thus dislodge the snow. This simple precaution will be amply repaid.

Protection from Damage. Tree guards, which are necessary in public parks and streets, are seldom required in the garden, but proprietary makes are available if specially needed. Serious damage has been caused by rabbits and hares getting into gardens and gnawing the trunks of trees during very severe weather and although rabbits are now seldom seen it may be prudent to protect any particularly valuable tree by fixing wire netting around the trunk to a height of about three feet. I have noticed that sometimes newly planted trees are attacked in preference to those which are established. The damage caused by birds to the buds of flowering trees has increased during the past few years and in the spring of 1955 was so bad at Wisley that it was impossible to get photographs of several early-flowering trees such as almonds and peaches. It is not practicable to provide protection on a large scale, but I would go to considerable length to ensure the flowering of a limited number of trees in a small garden. Unfortunately, despite the almost revolutionary advances in pest control in recent years no satisfactory treatment has been found. A good deal has been heard about using moth balls, but experiments at Wisley have not yielded encouraging results. Small trees such as *Prunus persica* could be dealt with by intertwining black cotton through the branches, but this would obviously prove difficult among larger trees. I would suggest that a sustained effort should be made by research workers in this particular subject.

Diseases. Some general advice can be given which should result in growing better trees, but specific treatment can only be recommended when particular troubles have to be dealt with. Hygiene generally is important. I would like to see many flowering trees getting a share of tar-oil winter wash when fruit trees are being treated. This would surely result in seeing clean shining tree trunks instead of the dirty greenish-grey coverings which are all too prevalent.

I have already stressed the importance of treating wounds caused by amputating branches and I must include a warning about the damage caused at the base of many tree trunks through careless use of the Dutch hoe or striking them with a lawn mower and other machines.

Suitable Trees for Small Gardens. The following is by no means a complete list of all trees which could be planted, but I am confident that a satisfactory selection can be made from this. It is obvious that personal taste will finally decide the choice, and one person for the sake of variety may plant twenty different trees, whereas another would plant groups of a few varieties. I would avoid planting trees from different genera and varying habit of growth in the same group, but would not hesitate to include different varieties of flowering crabs or cherries. I realize that some of the trees suggested are frequently seen as large shrubs, but these can be trained into small trees. I have not given descriptions as these can be readily found in specialists' catalogues or reference books.

DECIDUOUS FLOWERING TREES

Amelanchier canadensis
Buddleia alternifolia
Cercis siliquastrum kousa
Cornus (Fig. 48)
„ *kousa* var. *chinensis* (Fig. 47)
„ *mas*
Crataegus oxyacantha coccinea
„ *oxyacantha coccinea plena*
„ *oxyacantha rosea*
Davidia involucrata var. *vilmoriniana*
Genista aethnensis
Koelreuteria paniculata
Laburnocytisus adami
Laburnum × *vossii*
Magnolia salicifolia
„ × *soulangiana* (Fig. 52)
„ *wilsonii*
Malus × *aldenhamensis*
„ *floribunda hillieri*
„ *halliana*
„ × 'Lady Northcliffe'
„ × 'Lemoinei'
„ × *magdeburgensis*
„ *sargentii* (Fig. 51)
„ × 'Simcoe'
Robinia hybrida 'Monument'
Styrax japonica (Fig. 50)

PRUNUS (FLOWERING CHERRIES)

Prunus × 'Okame'
„ *incisa*
„ 'Kanzan'
„ *longipes* ('Oku-miyako') (Fig. 46)
„ 'Pandora'
„ *sargentii*
„ *serrulata erecta* ('Amano-gawa')
Prunus sieboldii
„ *subhirtella*
„ *subhirtella autumnalis*
„ *subhirtella rosea*
„ 'Tai-Haku'
„ 'Taoyoma zakura'
„ 'Ukon'
„ 'Umineko'

PRUNUS (FLOWERING PEACHES, PLUMS), ETC.

Prunus communis (Fig. 49)
„ *davidiana alba*
„ *persica* 'Aurora'
Prunus persica 'Clara Meyer'
„ *persica* 'Iceberg'
„ *cerasifera blireiana*

TREES FOR AUTUMN COLOUR OF LEAF OR BERRY

Acer ginnala
„ *griseum*
„ *palmatum*
„ *palmatum atropurpureum*
Crataegus × *carrierei*
Crataegus crus-galli
„ *durobrivensis*
„ *prunifolia*
Malus pumila 'Golden Hornet'
„ *pumila* 'John Downie'
„ *tschonoskii*
Nyssa sylvatica
Photinia villosa
Sorbus aucuparia
„ *aucuparia aspleniifolia*
„ *commixta*
„ *discolor*
„ *hupehensis*
„ *prattii*
„ *sargentiana*
„ *vilmorinii*

TREES WITH COLOURED FOLIAGE

Acer negundo variegatum
„ „ *californicum aureum*
„ „ *elegantissimum*
„ *platanoides drummondii*
„ *pseudoplatanus brilliantissimum*
Prunus cerasifera atropurpurea (*pissardii*)
„ *cerasifera nigra*
„ *spinosa purpurea*
Salix alba argentea
Sorbus aria lutescens

FASTIGIATE TREES

Carpinus betulus columnaris
Crataegus monogyna stricta
Fagus sylvatica fastigiata
Prunus serrulata erecta ('Amanogawa')
Robinia pseudacacia fastigiata

WEEPING TREES

Betula pendula youngii
Caragana arborescens pendula
Malus pumila 'Elise Rathke'
Prunus ivensii
" *serrulata rosea*
Prunus subhirtella pendula
" *subhirtella pendula rubra*
" *yedoensis pendula*
Salix caprea pendula
" *purpurea pendula*

TREES WITH COLOURED BARK

Acer griseum
" *hersii*
" *pennsylvanicum*
" *rufinerve*
Betula spp.
Prunus serrulata tibetica
Sorbus aucuparia beissneri

EVERGREEN AND SEMI-EVERGREEN TREES

Arbutus unedo
Cotoneaster 'Cornubia'
" *frigida* 'Vicarii'
" 'Watereri'
Ilex aquifolium argentea marginata
" " 'Madam Briot'
" " *pyramidalis*

CONIFERS

Chamaecyparis lawsoniana allumii
" *lawsoniana columnaris glauca*
" *lawsoniana ellwoodii*
" *lawsoniana erecta viridis*
" *lawsoniana fletcheri*
" *lawsoniana lutea*
" *lawsoniana pottenii*
Chamaecyparis lawsoniana stewartii
" *lawsoniana wisselii*
" *obtusa crippsii*
Cupressus arizonica pyramidalis
Juniperus chinensis aurea
" *virginiana canaertii*
" *virginiana schottii*
Libocedrus decurrens
Thuja orientalis elegantissima

TRANSPLANTING SIXTY-YEAR-OLD TREES: A NEW APPROACH

W. G. Ayres, N.D.H.

THE relative problem of progress and tree preservation, especially in connection with public works development is one which calls for the closest examination and the co-operation of all interested parties, committees and officials.

Housing development has possibly never been carried out on such a gigantic scale as that which has occurred during the post-war years; this and other public works involving the use of land has inevitably included a considerable number of trees, a fair proportion of which

may be first-class healthy specimens which could have graced their surroundings for many years to come if the responsible authority had only made an effort to save their trees.

This should not be taken to imply that every tree involved in a development scheme has been felled willy-nilly—indeed, there are numerous instances throughout the country of quite considerable effort having at some time been made by a modification of the original plan, with the result that a number of fine trees have been spared the woodman's axe. Such action is commendable and it is to be hoped that planning authorities will make greater efforts wherever possible to preserve trees from destruction when housing and other developments are contemplated.

Such an effort was made by the Nottingham City Council in 1951 and the following account may be of interest to other authorities who may be faced with a similar problem.

The proposed Trent Flood Alleviation Scheme sponsored by the Trent River Board received the approval of the Ministry of Agriculture in 1946. To some extent this involved the property of the Nottingham City Parks Department. This was especially so at Victoria Embankment —one of the finest riverside promenades in the country, extending from Trent Bridge to Wilford Bridge—a distance of 1¼ miles. It is a most popular rendezvous and affords much pleasure to its citizens and visitors.

Throughout its length, it provides a carriageway furnished on either side with majestic specimens of London planes, a wide expanse of greensward interspersed with suitable footpaths and a concrete-stepped embankment to the river-side.

The Parks Committee were naturally greatly concerned when they heard that the flood alleviation would involve a river widening scheme and the necessary flood defences would include the demolishing and rebuilding of 4,600-foot run of existing concrete-stepped embankment, and more especially the setting back of the carriageway for a length of 1,700 feet involving the removal of thirty-six trees (Fig. 53).

As far as the Committee were concerned, this presented the most serious problem, and the possibility of losing a section of one of the most beautiful features of Victoria Embankment—its avenue of trees.

Were they to lose those magnificent trees? and if so, what were the alternatives? Several suggestions were made and included either new features or replanting with young trees. On the other hand, the Director of Parks stressed (1) the importance of retaining the trees, (2) he recommended that all the trees involved be transplanted, and (3) asked for authority to consult a firm of tree specialists. This was given and an approach was made to Messrs. Hillier & Son of Winchester, who instructed their General Manager, the late A. J. IVENS, to inspect and report.

This was duly carried out in March 1951 and a report received within a few days.

This report contained much useful information, but the most encouraging feature of the report indicated that from a purely horticultural point of view, such trees may be transplanted with reasonable chance of success dependent on several factors.

The report was duly considered by the Committee and instructions given to the Director of Parks to proceed with the work.

All the trees to be transplanted were London planes and were planted in their present position in 1897. Assuming they were six to ten years old on planting, they were, therefore, approximately sixty-eight years old, with an average height of 50 feet, a 40-foot spread and the diameter of the main stem at 4 feet from base was 19 inches. The estimated weight of each tree when prepared for lifting was from 10 to 14 tons and the distance to move each tree varied from a few feet to 120 feet.

Work commenced in the autumn of 1951, when the roots of all the affected trees were prepared. This was done by digging a circular trench with a radius of 6 feet from the centre of the trunk, and outside this all roots, with the exception of two anchor roots on the windward side, were cleanly cut; the trench was then refilled with fine soil and firmly rammed (Fig. 54).

The effect of this treatment was most marked during the following summer; early leaf fall of all the treated trees was noted; indeed, evident signs of distress were considered due to the very hot and dry period, so that the pumps of the Fire Service were brought into use to pump river water to the roots and to provide an overhead spray, with most beneficial results. Indeed, on the occasion when a portion of the root ball had been exposed for inspection, it was found to be a mass of young fibrous roots and showing every indication of being in first-class condition for transplanting during the coming autumn (Fig. 55).

It soon became evident with the prospect of such a large-scale transplanting operation before us, involving the use of machinery and engineering tackle, that a starting date should be decided upon. The City Engineer would then be able to assemble his cranes and other tackle and staff and also the Parks Department staff would be in readiness to begin their operations on the agreed date and to have their first tree already prepared for lifting and transplanting to its new station.

The main items of machinery used consisted of two, 10-ton, mobile cranes. These were required in order to lift the tree bodily and simultaneously transport it to its new station; a small excavator was found to be most useful in the opening up of the new stations, the completion of which was to be carried out by manual labour.

It had previously been agreed that if the transplanting operation was to have successful results, any reduction of the root system should be accompanied by a corresponding reduction of the head; although any form of pollarding of trees is distasteful to the writer, it was realized that by judicious pruning later on when new growth has developed, the head could be restored eventually to its former shape and beauty.

The general programme of operations for each tree to be transplanted provided:

(1) A small party of skilled staff for pruning the tree prior to its removal.
(2) Another party to prepare the tree for removal and then to replant into its new position.
(3) Whilst the crane operators and machines were fully engaged with the fitting of lifting gear, on lifting, transporting and lowering the tree to its new position, the parks staff would transfer its attention to the actual planting. Finally, the tree received the attention of the mechanics and was securely stayed with three wire guys attached to a collar at the head of the trunk and anchored to eyebolts let in concrete footings.

With such a programme, the mechanics of such an operation might appear to be comparatively simple; indeed, one had constantly to remind the workers that although of tremendous bulk, yet a living tree was involved.

The importance of careful excavation, the keeping of the ball of roots intact, the careful padding of any part of the tree which came in contact with the lifting gear, the utmost care of transportation and the final act of planting—all as far as possible carried out with the greatest care, in order to ensure that every individual tree had a fair chance of survival.

Although each operation was important, the most vital part of the proceedings obviously must be the act of planting. This was carried out with meticulous care and after the tree had been lowered into its new position, it was secured by means of stay ropes anchored to concrete blocks below ground level. The ball of roots was kept intact and the hole partially filled with soil which was then copiously watered. This enabled the soil to penetrate under the ball and so fill in any air pockets, which on account of the size of the ball were quite inaccessible. More soil would then be added, followed by more gushings of water until it was evident that no further air pockets remained. More soil was added until the hole was completely filled and a final watering given to complete the operation (Fig. 56).

After-care of all transplanted trees amounted to copious watering during any long spell of dry and hot weather. The removal of guy ropes was carried out in the spring of 1955 and it is gratifying to report that of the thirty-six trees involved in the operation thirty-five are alive and healthy—a very worthwhile result of a most interesting job (Fig. 57).

PLANTS AND PROBLEMS—XXIII

BUD DROP OF CAMELLIA

Question. After the war I bought a specimen of *Camellia japonica* 'Elegans' and planted it against a north wall. The soil is acid here, but, nevertheless, before planting I dug in a dressing of peat and some spent hops. Subsequently, I have watered the plant from a can with soft water but it was only this year that any buds showed on the bush. Now, to my dismay, the buds have turned brown at the base and all of them have fallen off, albeit the leaves remain fresh and green. Can you please say why this happened? Perhaps I am not growing a good variety and I would be grateful to know the names of a few suitable ones for the purpose.

Answer. In all probability the reason for bud drop on the camellia grown out of doors is due to dryness. When grown against a wall the shrub must be kept moist and the only practical way to do this is to soak thoroughly the soil with water from a hose and to repeat the treatment whenever necessary. Of course, this may mean applying hard water but no detrimental effects will be forthcoming as a result if the acidity of the soil is maintained by an annual mulch of really acidic peat, that is, peat with a reaction of pH 4·0–5·0.

The variety planted will do well out of doors. Others which can be flowered very nicely are *C. japonica* 'Donckelarii' and *C. japonica* 'Althaeaflora.' The latter is a fine, anemone-centred variety with red-crimson flowers and one that does exceptionally well, for example, on a shady east wall near the gate attendant's hut at Wisley.

THE CULTIVATION OF GLOBE ARTICHOKES

Question. Please could you give me some information about growing globe artichokes? I understand that as well as growing the plants to produce the flower-heads it is possible to blanch the stems.

Answer. The globe artichoke (*Cynara scolymus*) is both a useful vegetable and a very ornamental foliage plant. The site should be open and sunny with plenty of moisture available in the summer. Prepare the soil by deep cultivation and the application of a good dressing of farmyard manure or compost. Obtain young plants or suckers from old plants and plant in March or early April at a distance of 3 feet between each plant and 3 feet between the rows. Before the plants get too large a catch-crop such as lettuce or radish can be taken from the ground between them. Cut the flower-heads as soon as they are fully developed, as old heads are not very palatable.

An annual application of farmyard manure or compost is advisable, but where this is not obtainable give a dressing of 2 ounces per square yard of sulphate of potash and 3 ounces per square yard of superphosphate in the autumn and 1 ounce per square yard of nitrate of soda in the spring.

AGAPANTHUS

FIG. 45—*Agapanthus* in the HON. LEWIS PALMER'S garden at Headbourne Worthy Grange, nr. Winchester

Photo, J. E. Downward

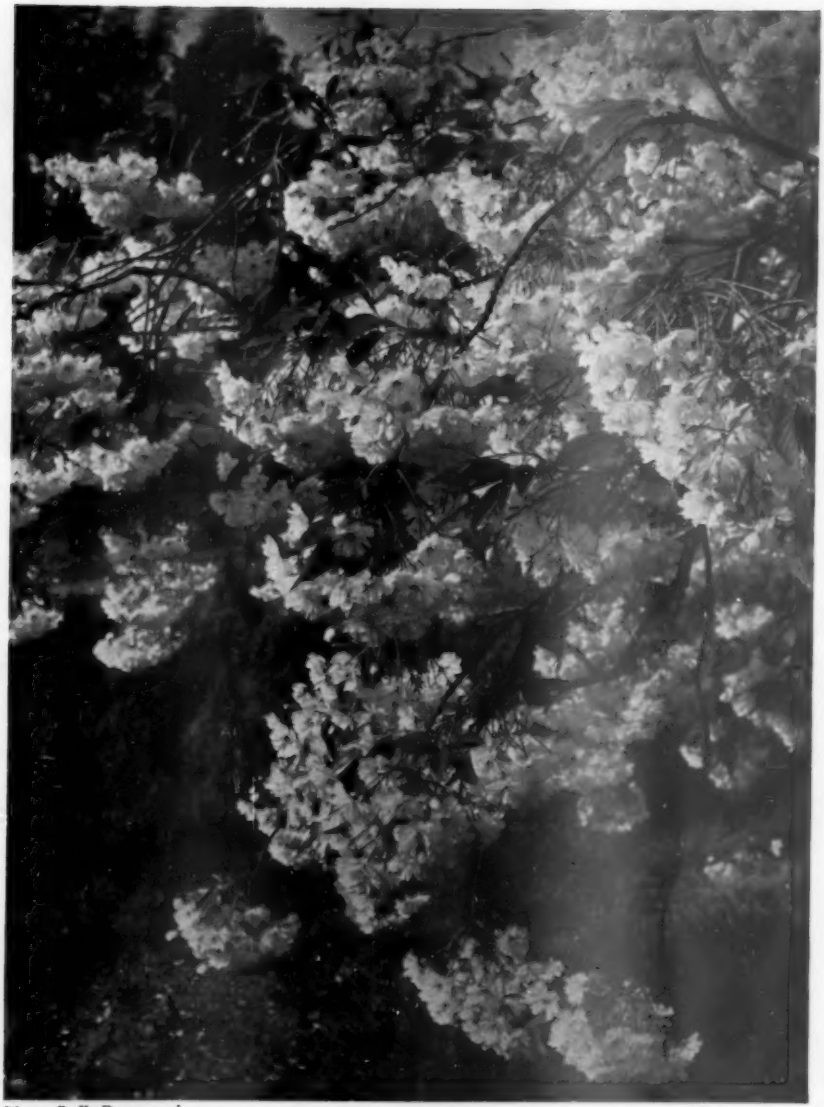
THE CHOICE AND CARE OF TREES FOR THE SMALL GARDEN

FIG. 46—*Prunus serrulata longipes* ('Oku-miyako')

FIG. 47—*Cornus kousa* var. *chinensis* in flower

Photos, J. E. Downward

FIG. 48—*Cornus kousa* in fruit



Photo, J. E. Downward

THE CHOICE AND CARE OF TREES FOR THE SMALL GARDEN

FIG. 46—*Prunus serrulata longipes* ('Oku-miyako')

FIG. 47—*Cornus kousa* var. *chinensis* in flower

Photos, J. E. Downward

FIG. 48—*Cornus kousa* in fruit

Photos, J. E. Downward

FIG. 49—*Prunus communis pollardii*, a fine almond, in the R.H.S. Gardens, Wisley

FIG. 50—*Styrax japonica*, a fine vase shown in the R.H.S. Tree and Shrub Competition

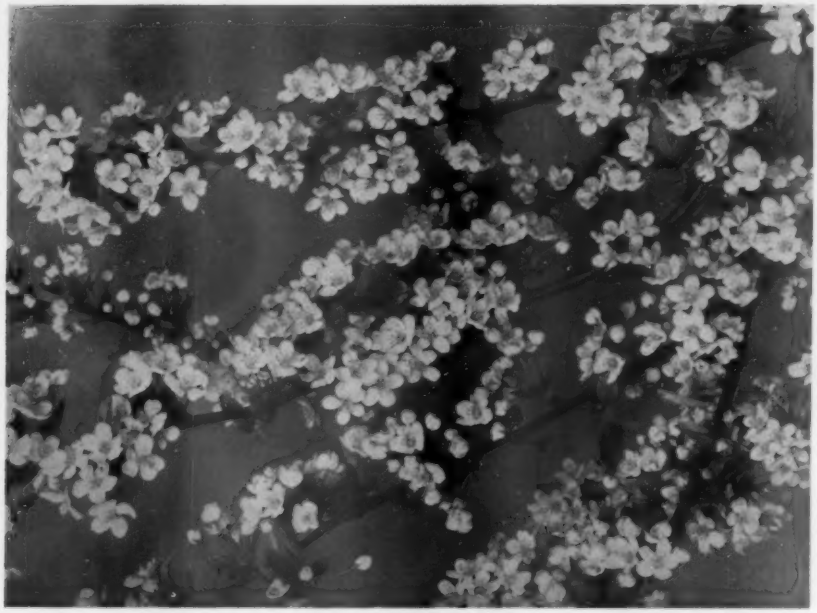


FIG. 51—*Malus sargentii*

Photos, J. E. Downward

FIG. 52—*Magnolia* × *soulangiana* in the Royal Botanic Gardens, Kew

TRANSPLANTING SIXTY-YEAR-OLD TREES

FIG. 53—The river widening in progress and original avenue of trees (See p. 175)

Photos, W. E. Middleton & Son

FIG. 54—(*left*) Preparing for transplanting (See p. 176); (*right*) Transporting to new station

FIG. 55—Lifting and transporting a tree (See p. 176)

Photos, W. E. Middleton & Son

FIG. 56—Final stage of planting (See p. 177)

TRANSPLANTING SIXTY-YEAR-OLD TREES

FIG. 53—The river widening in progress and original avenue of trees (See p. 175)

Photos, W. E. Middleton & Son

FIG. 54—(*left*) Preparing for transplanting (See p. 176); (*right*) Transporting to new station

FIG. 55—Lifting and transporting a tree (See p. 176)

Photos, W. E. Middleton & Son

FIG. 56—Final stage of planting (See p. 177)

Photo, W. E. Middleton & Son

FIG. 57—The avenue two years later—1954 (See p. 177)

ASPECTS OF GRAPE GROWING

FIG. 58—Small section of Vineyard seen from Winery Roof (See pp. 183–5)

With either of these treatments the plantation should last for three to four years. Before destroying the plantation the stems may be blanched. The method consists of cutting down the plants in July to encourage the production of basal shoots. These should be tied up in September, should have straw wrapped round them and finally soil placed round the straw. It takes four to five weeks to blanch the stems.

Two varieties are commonly grown, 'Purple Globe' and 'Green Globe.' In very exposed gardens the plants will need some protection with straw in the winter.

NEWLY PLANTED ROOTSTOCKS

Question. I have a number of apple rootstocks which I obtained during the winter, intending to raise my own trees for a small orchard. Will it be safe to use these for grafting this spring?

Answer. The chances of success from grafting this spring would be very small. Stocks need sufficient time to become established in their new quarters before being used for propagation. Normal practice, providing stocks are suitable, is to bud them the summer following planting. You could therefore try this in July or August and where there are any failures use the stock for grafting next spring.

PEACHES—SELF-FERTILE

Question. I have a young peach tree, trained on a warm outside wall, which is flowering this year. The variety is 'Peregrine.' Can you please tell me whether this variety needs cross-pollinating, or is it self-fertile?

Answer. Unlike many of our tree fruits peaches—and nectarines—are practically all self-fertile. Consequently solitary trees should fruit satisfactorily always providing, of course, that they are in a fairly sheltered position and do not experience a damaging frost. If you wish you can take the precaution of assisting pollination by lightly dusting the open flowers with a rabbit's tail at mid-day. It is said, however, that the variety 'Hale's Early' fruits more satisfactorily when cross-pollinated.

LILY BEETLE

Question. Would you please identify the enclosed beetle which along with some yellowish grubs is eating the leaves of my lilies? How can it be controlled?

Answer. The handsome red beetle is the adult of the lily beetle, *Lilioceris lilii*. This insect has been known as a pest of lilies for a very long time and there are several records which date back to the last century. However, it only appears to be established in a certain area of the home counties centred around Chobham, Surrey, though it has been recorded from time to time from other parts of Britain.

The adults overwinter in the soil and in spring they become active and lay small red eggs on the leaves of various lilies. Later the eggs hatch giving rise to the grubs, which whilst feeding, cover themselves with their own frass—a black, slimy, material—as a means of protection. Both the adults and larvae feed voraciously on the aerial parts of the plant. When fully fed the grubs pupate in the soil and a further generation of adults appear in June. The life-cycle is repeated but adults which emerge in the autumn remain underground and do not appear until the following spring.

At the first sign of attack the plants should be sprayed or dusted with DDT and since both the adults and larvae are susceptible to this insecticide, two applications with an interval of two or three weeks between, should normally be sufficient.

PEACH SCALE

Question. I have a well-established indoor peach tree which has scale rather badly, could you suggest a remedy?

Answer. The best control of the peach scale insect, *Eulecanium corni*, is to spray the tree with 4 per cent. tar oil in December. It is important that this wash should only be applied when the tree is dormant and since peach breaks early, the spraying should be completed by the end of December at the latest.

In order to check the pest at this time of year (April), the tree may be sprayed with nicotine, to which must be added a proprietary wetting agent. Alternatively the new insecticide malathion may be used. In either case, two applications will be required, with a fourteen-day interval between.

ROSE BLACK SPOT CONTROL

Question. What is the up-to-date control of Black Spot disease in roses? I have been using a copper spray but would like to have the latest information.

Answer. We must first refer again to our statement on this disease given in this column for May 1954 that we believe the first approach to the control of Rose Black Spot should be to give careful consideration to the soil conditions and food requirements so that healthy root action is encouraged. Not only will vigorous plants to some extent resist the disease but spraying with colloidal copper fungicides will be safer as these liquids may damage weakened leaves and make the bushes even more unsightly. There is available now a new spray called "Captan" and although we have not used it yet at Wisley, last season we received from Fellows a number of letters expressing satisfaction at the control of Black Spot obtained with this spray. It is used immediately after pruning and thereafter at fourteen-day intervals as necessary. It must be said, however, that "Captan" has little, if any, effect against Rose Mildew.

A NEW SPECIES OF CAMELLIA FROM HONG KONG NEW TERRITORY

J. Robert Sealy

SINCE the year 1841, when RICHARD BRINSLEY HINDS made the first important collection of plants on the island of Hong Kong, the flora of that island, and its New Territory on the adjacent mainland, has been thoroughly examined by a long succession of botanists and collectors, while the adjacent Chinese province of Kwangtung has also been widely explored, especially during the years from 1916 to 1940, when large collections were made under the auspices of the Lingnan and Sun Yatsen Universities. It was, therefore, something of a shock to find that a specimen collected in the New Territory some three and a half miles north-west of the port of Kowloon in October 1955 by a Chinese forester, MR. C. P. LAU, represented a new and very distinct species of *Camellia*—especially as it is a striking plant with white flowers 5½ inches across and handsome, shining bullate leaves. How such a plant can have remained undiscovered until now is a mystery, but no previous record of it has been found.

The specimen collected by MR. LAU was sent to Kew for naming towards the end of November 1955 by MR. H. C. TANG of the Hong Kong Gardens Division, but since it was not possible to dissect the flower on that specimen, a request was made for further material. MR. TANG at once very kindly made a special trip to the plant, and though at that time, December 10, 1955, flowering was just coming to an end, a single fresh flower was found and carefully dried so that its structure could be examined. Particulars of the occurrence of the plant are given in the following extract from a letter from MR. R. E. DEAN, Superintendent of the Gardens Division, Hong Kong:

"You will be interested to know that only one plant, a small tree about 10 ft. high, has so far been found. It is growing in partial shade, on the edge of a wooded ravine, in company with *Ilex rotunda* (20 feet tall), *Caesalpinia* spp. (climbing), *Adina* spp. (5–6 feet tall), and grass about 5 feet tall. It is a multi-branched tree, with a base diameter of a little over 12 inches. There is strong reason to believe that it was cut to within a foot or so of the ground a long time ago.

"Its age is difficult to determine, but it is probably between fifty and seventy years. No other similar plants have been found growing within a radius of a hundred yards of this particular specimen, but I am planning a fairly extensive field trip there in the near future, and hope to spend several days making a thorough survey over a much wider adjoining area.

"The area concerned is very remote, and is served only by a narrow track; it is a good one and a half hours' hike from the road. In the ordinary course of events it is certain that the spot is hardly ever visited, except by an occasional forester or villager; the forester who told us

about it had no particular business in the area and came upon it quite by chance. It is quite likely that it has hitherto been passed off as a *Gordonia*."

The new *Camellia* is not closely related to any other species, and is outstanding in the genus by the combination of the following characters: flowers sessile with perules (bracteoles and sepals) forming a large cupular persistent involucre 3–4 cm. long and 4·5–5 cm. wide, white corollas 12–14 cm. in diameter united to the androecium for only 6 mm. at the base, stamens free to the union with the corolla, gynoecium of five carpels densely tomentose except for the five glabrous stigmatic arms, and 5-locular capsules invested by the persistent perules even when dehisced.

It is a pleasure to comply with a suggestion made by MR. DEAN, and to propose for the new species the name *Camellia granthamiana* in honour of SIR ALEXANDER GRANTHAM, G.C.M.G., Governor of Hong Kong since 1947, who, so MR. DEAN tells me, has taken a great interest in the discovery of this camellia, as, indeed, he does in all things botanical.

Camellia granthamiana Sealy **sp. nov.** inter congeneros floribus solitariis terminalibus sessilibus, perulis (bracteolis sepalisque unam seriem formantibus) persistentibus cinereo-albo-tomentosis in involucro circiter 3–4 cm. alto et 4·5–5 cm. diametro dispositis, corolla alba permagna (12–14 cm. diametro), petalis basi per 6 mm. ad androecium adnatis, staminibus numerosissimis, filamentis basi circiter 6 mm. coalitis ceterum liberis, gynoecio ramulis stigmatiferis quinque exceptis albo-tomentoso, capsula in valvas quinque patentes dehiscente perulis persistentibus vestita insignis.

A *tree* about 3 metres high; young branches brown, pubescent at first; older branches ash-grey. *Leaves* shortly stalked; *blades* oblong-elliptic to broadly oblong-elliptic, bluntly acuminate, rounded or obtuse at the base, mostly 8–10 cm. long and 2·7–4 cm. wide, but here and there shorter (6·5–7·5 cm.) and/or narrower (2–2·2 cm.), very shallowly and bluntly serrulate with the teeth about 2 mm. apart, leathery, upper surface shining deep green with the venation deeply impressed and glabrous, lower surface light green with midrib and nerves raised spreading-villose on the midrib at first and with small brown cork-warts widely scattered over the surface; *petioles* stout, 6–7–(8) mm. long, pubescent. *Flowers* solitary and collateral with a vegetative bud at the end of young shoots and branches, perulate. *Perules* 12 or more, persistent until after the capsule has dehisced, at anthesis forming a cupular involucre 3–4 cm. high and 4·5–5 cm. in diameter, varying from semi-orbicular about 8 mm. high and 14 mm. wide (outermost) to orbicular-obovate 3·6–3·8 cm. long and 4–4·6 cm. wide, strongly concave, leathery-crustaceous, dark brown, yellow at the base inside markedly so on the inner perules where the yellow blotch is up to 1·6 cm. long and wide, outer surface grey-tomentose or lower perules pubescent to subglabrous, inner surface pubescent to tomentose. *Corolla* 12–14 cm.

in diameter, white, yellowish when dried, of 8 wide-spreading petals united with the androecium for up to 6 mm. from the base; *free part of petals* from obovate or broadly obovate 4·5–7 cm. long and 3·8–5 cm. wide (outer) to oblong 5–5·9 cm. long and 3·5–4·3 cm. wide or 4 cm. long and 2·5 cm. wide (innermost), more or less deeply notched. *Androecium* of numerous stamens united for up to 6 mm. at the base and forming a dense cluster in the centre of the flower; free part of filaments filiform and about 1·5–2 cm. long; anthers bright yellow, about 2 mm. long when dehisced; pollen golden-yellow. *Gynoecium* about 3 cm. long, densely white-tomentose up to the stigmatic arms; *ovary* globose-ovoid, about 4 mm. high and 5 mm. in diameter; *style* stout, tapering upwards, 2 cm. long and then dividing in 5 glabrous recurved 7 mm. long stigmatic arms; stigmas 1–1·5 mm. across. Scar of attachment of corolla and stamens apparently bright orange in colour. *Capsule* (seen only in the dehisced condition), embraced by the persistent perules, 5-valved; *valves* spreading horizontally but remaining firmly attached at the base to the stout 1·2–1·5 cm. high columella, 2·7–3·5 cm. long and 1·5–2 cm. wide, 7–8 mm. thick and woody in the dried state. *Seeds* subglobose somewhat compressed on two sides 1 cm. long and 1·3 cm. wide, or rounded-cuneate about 1·3 cm. in diameter, dark brown.

HONG KONG NEW TERRITORY: Shing-Mun (22° 23′ N., 114° 9′ E.), 600 metres altitude, October 25, 1955, *C. P. Lau 177*; ibid. December 10, 1955, *H. C. Tang 2422* (type, in the Kew Herbarium).

Cuttings have recently been received at the Royal Botanic Gardens, Kew, and it is hoped to establish the species in cultivation. It will, of course, need to be grown in a warm house.

ASPECTS OF GRAPE GROWING

R. Barrington Brock, M.B.E., F.R.I.C., B.Sc.

THE Viticultural Research Station has now been in operation for nine seasons, and the data on the possibilities of grape growing in this country are becoming clearer and clearer. For instance, it is now quite definite that there are a number of varieties which will ripen satisfactorily for eating, entirely unprotected in the open in southern England, and there are other varieties from which it is probable that good white wine can be made.

As a matter of interest, it is also very likely that a high-grade brandy can be made, because this type of climate seems to produce the conditions in the grape which are wanted for the best brandies.

From the grower's point of view, however, the research is still in its infancy and this report can be no more than an interim one, pointing the way the research is going. It is not at all certain whether with the

facilities at our disposal, it is possible to assess the commercial possibilities. Obviously, one needs to have a considerable quantity of the most suitable varieties, and to do some actual selling, in order to determine what sort of price the public will pay, and it is not really possible in this small-scale research, to do this without a Government grant.

The present state of our knowledge is as follows:

Seven varieties will yield ripened grapes for eating, in the open vineyard, under suitable conditions, in almost any year. These varieties are: 'Muscat de Saumur,' 'Pearl of Czaba,' 'Pirovano 14,' 'Noir Hâtif de Marseille,' 'Précoce de Malingre,' 'Madeleine Royale,' 'Oliver Irsay.'

We cannot, however, say whether these grapes would be acceptable to the public or what price they would be prepared to pay, and we have noted particularly that in the open vineyard one is likely to get a lot of damaged bunches from autumn gales, which will obviously reduce the market value.

Some of these varieties also yield very small quantities of grapes, but others, e.g. 'Pirovano 14,' are outstanding croppers with very good flavour.

All the above varieties, plus four others can also be ripened satisfactorily under cloches or under Dutch-light structures, and here, I think, there begin to be some real commercial possibilities. The slightly later varieties which are suitable for these covered conditions are: 'Chasselas Rose Royale,' 'Chasselas 1921,' 'Muscat Queen,' 'Excelsior,' and, requiring slightly more favourable conditions, e.g. a sheltered site facing south, 'Muscat Hamburgh' and 'White Frontignan.'

A number of these are of the highest quality and when grown under cloches or Dutch-light structures, should be really marketable products, but we have no knowledge of the price which they would command. Several of them, however, are immensely superior to the average imported grape in flavour.

The processes which we have worked out for pruning and cultivation, and which have been described in the two reports we have published, are still correct and the treatment under cloches is proving very simple, the amount of work entailed being rather less than the work on a crop of tomatoes. We view this scheme with some visions of success commercially because the grapes can well be covered only during the summer, and there appear to be indications that the use of cloches in summer is not so profitable now on some of the older crops.

I would, however, particularly like to air my scheme which I put up to a meeting of the N.A.A.S. and Horticultural Scientists. I suggest that one of the most favourable methods for the grower would be to plant a perfectly normal open-air vineyard rather more crowded than is customary, i.e. 2 feet between the rows, 4 feet between the vines, which we know by our tests is a practical spacing, even if rather crowded. This vineyard should be planted underneath the permanent uprights of a Dutch-light structure. The vines will grow perfectly well without

the Dutch lights right through the spring, winter, and if necessary, on until July. They can then be covered with the Dutch lights from July until October, or if early crops are wanted, could be covered from March to August.

Immediately the crop is taken off, the Dutch lights can be used again on the ground and we think that this is probably a very good mid-summer crop for Dutch lights, giving a very high yield indeed per square foot.

A further attractive point about this is that we have found that two varieties of grapes hang extremely well under cloches if they are not cloched too early. We have been able to keep the 'Chasselas' varieties and 'Muscat Hamburgh' right up to December in first-class condition and it is possible that this would catch a convenient market for English-grown eating grapes. They would probably need to be cloched from July or August until November for this work.

The early reports mentioned a number of varieties which we have found on continued research are unreliable in this climate, and we have received literally hundreds of varieties from all over the world in the last few years. Most of these have proved unsuitable for this climate for one reason or another and it is interesting that almost all the American hybrids have been less satisfactory than the European hybrids, quite apart from their rather strange flavour.

We have now such a good variety of eating grapes available of such high quality, that we have ceased to do any specific research on them. Of the varieties coming through for trial, a few will be added to our table grape list, but in general we are now shifting the emphasis of research on to wine and brandy.

I think that this, at the present stage, is hardly likely to interest the growers commercially, but, in passing, it is worth saying that we have found several varieties which appear completely reliable in open vineyards in this country and are giving very good crops. With the help of the new winery, we are now getting much larger-scale wine-making done on the various varieties and there appears to be every evidence of success in this line also.

The cost of the research has been, until now, partially financed by selling rooted vines from the research stocks, largely because we found such deplorable errors in the naming of commercially available varieties. Of twelve submitted in one batch this year, seven were wrongly named, and we have made it a rule that only vines from the actual research clones are sold. The incomings from these sales do not, of course, anything like pay for the research, but they help to make it a slightly less extravagant hobby.

As it is privately run, we cannot very well encourage visits normally from interested people, but in order to make the information available as freely as possible, we hold an open weekend each year to which anybody can come by prior application. The weekend is always in the autumn and application should be made during the summer.

PLANTS TO WHICH AWARDS HAVE BEEN MADE IN 1955

ORCHIDS

Cattleya (Bow Bells G.) 'Charmaine' F.C.C. November 15, 1955. This is another large-flowered cultivar from the popular Bow Bells grex which resulted from crossing *C.* 'Edithiae' and *C.* 'Suzanne Hye.' Four large blooms on the plant were exhibited, individual blooms being 7½ inches by 6½ inches. The basic satin white colour is enhanced by the orange-yellow throat of the labellum. The lateral tepals of the inner whorl are very large with recurved apices and strongly fimbriated margins. The outer tepals are small and elliptical. Exhibited by H. W. B. Schroder, Esq., Dell Park, Englefield Green, Surrey.

Cypripedium (Nurella G.) 'Sydney' F.C.C. November 15, 1955. *C.* 'Estrella' and *C.* 'Nuggett' are the parents of this very large-flowered cultivar. The dorsal tepal above is 4½ inches wide, with a broad white margin, and the remainder pale green flecked with brown. The downward-pointing lateral tepals and labellum are more or less gamboge with faint tessellations. The column is a clear primrose yellow. All parts of the flower are markedly glossy. Exhibited by S. Tharp, Esq., 10 Farm Lane, Purley, Surrey.

Cypripedium (Rosemary Upton G.) 'Shalstone' A.M. November 15, 1955. A cultivar obtained by crossing *C.* 'Gayhill' and *C.* 'Wellesley.' This plant has fairly large flowers with the labellum held unusually erect. The glossy dorsal tepal has a dark purplish centre and a broad white margin. The laterals and labellum are pale greenish, upon which a purplish-brown flush is superimposed. The bases of the laterals are spotted with purple. Exhibited by H. S. Wharton, Esq., 'Shalstone,' 12 Templewood Avenue, Hampstead, N.W.3.

Cypripedium (Grex unknown) 'Sydney' A.M. November 29, 1955. This cultivar of unknown parentage has a glossy flower 4 inches by 3½ inches. The incurving dorsal is reddish brown with a broad irregular green margin. The laterals are superimposed upon yellow brown and a sharp horizontal division occurs between the lighter lower half and the deep brown upper part. In addition the laterals are markedly curved inwards towards the labellum. The latter is a glossy reddish-brown. Exhibited by S. Tharp, Esq., 10 Farm Lane, Purley.

Vanda × rothschildiana 'Subha' F.C.C. November 29, 1955. A large spike of this handsome *Vanda* cultivar was unanimously given this award, after being flown over from Penang, Malaya, by Messrs. Ng Peng Wah and Tan Aun Phaik. The spike bore sixteen large flowers, each about 4½ by 4½ inches, and loosely arranged around the spike. The obovate tepals are delicate pink with faint tessellations of a darker colour. The small emarginate labellum is ridged on the upper surface and is deep rose. The well-known species *V. coerulea* and *V. sanderiana* are the parents of this cultivar.

WISLEY TRIALS, 1955

EARLY-FLOWERING CHRYSANTHEMUMS

One hundred and thirty stocks of chrysanthemums were grown at Wisley in 1955. Of these, twenty-four were grown for the first time, having been selected during 1954 for trial at Wisley by the Joint Chrysanthemum Committee of the Royal Horticultural Society and the National Chrysanthemum Society.

Cuttings were rooted during February and March, potted up in 3-inch pots, planted into a cold-frame, and finally planted in the open ground on May 2, 1955. Twelve plants of the disbudded varieties and six plants of the pompon and spray varieties were grown. The disbudded varieties were stopped where necessary to encourage production of eight to twelve flowers per plant.

Control of chrysanthemum eelworm (*Aphelencoides ritzema-bosi*) was obtained by using sprays of Parathion at 0·01 per cent. active ingredient. The spray was applied firstly to the stool plants after they had been boxed up, secondly to the young plants in the frames and thirdly after the trial had been planted out.

The trial was inspected by the Joint Chrysanthemum Committee on August 15 and 29 and September 15 and 29, 1955, and on its recommendation the Royal Horticultural Society and the National Chrysanthemum Society have made jointly the following awards to chrysanthemums after trial at Wisley.

The varieties are arranged in this report according to the classification of the National Chrysanthemum Society. The number in brackets after the description of the variety was that under which it was grown in the trial.

SECTION XX.—OUTDOOR VARIETIES, INCURVED

(*a*) Large Flowered

Pink

JOHN WOOLMAN. (Raised, introduced and sent by Messrs. H. Woolman Ltd., Sandy Hill Nurseries, Olton Road, Shirley, Birmingham.) **F.C.C.** September 29, 1955, as a disbudded variety for garden decoration. Described R.H.S. JOURNAL 79, p. 142. (**A.M.** 1953). [58]

Yellow

YELLOW SHIRLEY CREAM. (Introduced by Messrs. E. Riley, Alfreton Nurseries, Woolley Moor, Derby and sent by W. Allen, Esq., 29 High Street, Northwood, Middlesex.) **A.M.** August 29, 1955, as a disbudded variety for garden decoration. Plant 42 inches high, compact, erect, bushy, bearing flower stems 30 inches long. Flowers 5¼ inches diameter, double, Aureolin (H.C.C. 3), reverse slightly paler. [129]

SECTION XXI.—OUTDOOR VARIETIES, REFLEXED

(*a*) Large Flowered

White

WHITE WINGS. (Raised, introduced and sent by Messrs. J. & T. Johnson, The Nurseries, Tibshelf, Derbyshire.) **F.C.C.** September 15, 1955, as a disbudded variety for garden decoration. Described R.H.S. JOURNAL 79, p. 142 (**A.M.** 1953). [41]

WHITE HOPE VALLEY. (Raised, introduced and sent by Messrs. J. & T. Johnson.) **A.M.** August 15, 1955, as a disbudded variety for garden decoration. Plant 36 inches high, compact, erect, bearing flower stems 24 inches long. Flowers 5 inches diameter, double, white, reverse cream. [46]

Yellow

YELLOW WINGS. (Raised, introduced and sent by Messrs. J. & T. Johnson.) **A.M.** September 15, 1955, as a disbudded variety for garden decoration. Plant 40 inches high, compact, erect, bearing flower stems 30 inches long. Flowers 6 inches diameter, double, a very clear shade of yellow near Canary Yellow (H.C.C. 2/1), reverse creamy-yellow. [42]

Light Bronze

EAMONN ANDREWS. (Raised, introduced and sent by Messrs. H. Woolman Ltd.) **F.C.C.** September 29, 1955, as a disbudded variety for garden decoration. Described R.H.S. JOURNAL **80**, p. 139 (**A.M.** 1954). [91]

(*b*) Medium Flowered

White

ANNIE MATHEWS. (Raised, introduced and sent by Messrs. J. & T. Johnson.) **A.M.** September 15, 1955, as a disbudded variety for garden decoration. Plant 36 inches high, very compact, bushy, bearing flower stems 20 inches long. Flowers 5 inches diameter, double, outer florets white, inner florets cream. [40]

Bronze

TOSCA. (Raised by Mr. H. Shoesmith, V.M.H.; introduced and sent by Messrs. H. Shoesmith Ltd., Mayford Nurseries, Moor Lane, Westfield, Woking, Surrey.) **A.M.** September 15, 1955, as a disbudded variety for garden decoration. Plant 48 inches high, compact, erect, bearing flower stems 36 inches long. Flowers 6¼ inches diameter, double, mahogany-bronze, reverse golden-yellow. [113]

Pink

BRENDA TALBOT. (Raised by Mr. H. Shoesmith, V.M.H.; introduced and sent by Messrs. H. Shoesmith Ltd.) **A.M.** September 15, 1955, as a disbudded variety for cutting for market. Plant 54 inches high, compact, erect, bearing flower stems 36 inches long. Flowers 6 inches diameter, double, a shade of rosy-pink near Rose Opal (H.C.C. 022/3). [50]

PINK DAWN. (Raised by Mr. H. Shoesmith, V.M.H.; introduced and sent by Messrs. H. Shoesmith Ltd.) **A.M.** September 15, 1955, as a disbudded variety for garden decoration. Plant 42 inches high, compact, erect, bearing flower stems 26 inches long. Flowers 5¼ inches diameter, double, Amber Yellow (H.C.C. 505/2), young flowers and inner florets on mature flowers flushed Neyron Rose (H.C.C. 623/3). [49]

Red

COTSWOLD FLAME. (Raised by Mr. R. Paine; introduced and sent by Messrs. H. Shoesmith Ltd.) **F.C.C.** August 15, 1955, as a disbudded variety for garden decoration. Described R.H.S. JOURNAL 78, p. 68 (**A.M.** 1952). [110]

HARDWICK. (Raised, introduced and sent by Messrs. J. & T. Johnson.) **A.M.** August 15, 1955, as a disbudded variety for garden decoration. Plant

42 inches high, compact, erect, bearing flower stems 28 inches long. Flowers 5½ inches diameter, double, a rich reddish-bronze flushed with crimson, reverse golden-yellow. [107]

SECTION XXII.—OUTDOOR VARIETIES, INCURVING

(*a*) Large Flowered

White

SCAWFELL. (Raised, introduced and sent by Messrs. J. & T. Johnson.) **A.M.** September 9, 1955, as a disbudded variety for garden decoration. Plant 36 inches high, compact, bushy, erect, bearing flower stems 24 inches long. Flowers 5½ inches diameter, double, outer florets creamy-white, inner florets Mimosa Yellow (H.C.C. 602/2). [43]

Light Bronze

WESTFIELD BRONZE. (Raised by Mr. H. Shoesmith, V.M.H.; introduced and sent by Messrs. H. Shoesmith Ltd.) **A.M.** September 15, 1955, as a disbudded variety for garden decoration. Plant 54 inches high, compact, bushy, bearing flower stems 42 inches long. Flowers 6½ inches diameter, light orange-bronze, reverse creamy-buff-yellow. [95]

SECTION XXIV.—OUTDOOR VARIETIES, POMPON

(*a*) Tall

Yellow

PRIMROSE BOUQUET. (Raised by Mr. H. Shoesmith, V.M.H.; introduced and sent by Messrs. H. Shoesmith Ltd.) **A.M.** August 29, 1955, as a spray variety for garden decoration. Plant 30 inches high, compact, bushy, erect. Flowers 1¾ inches diameter, outer florets creamy-yellow, inner florets Aureolin (H.C.C. 3). [2]

WOKING PROFUSION. (Raised by Mr. H. Shoesmith, V.M.H.; introduced and sent by Messrs. H. Shoesmith Ltd.) **A.M.** September 29, 1955, as a spray variety for garden decoration. Plant 30 inches high, compact, bushy, erect. Flowers 1$\frac{7}{16}$ inches diameter, outer florets Aureolin (H.C.C. 3), inner florets Aureolin (H.C.C. 3) tinged bronze. [9]

Pink

CHICK. (Raised by Mr. H. Shoesmith, V.M.H.; introduced and sent by Messrs. H. Shoesmith Ltd.) **A.M.** September 29, 1955, as a spray variety for garden decoration. Plant 48 inches high, compact, bushy, erect. Flowers 1½ inches diameter, outer florets near Magenta Rose (H.C.C. 027/1), inner florets near Magenta Rose (H.C.C. 027/1) tinged with bronze. [23]

PLENTY. (Raised by Mr. H. Shoesmith, V.M.H.; introduced and sent by Messrs. H. Shoesmith Ltd.) **A.M.** August 15, 1955, as a spray variety for garden decoration. Plant 33 inches high, compact, bushy, erect. Flowers 1½ inches diameter, outer florets Fuchsia Purple (H.C.C. 28/2), inner florets Fuchsia Purple (H.C.C. 28/2) tinged with bronze. [21]

WOKING BOUQUET. (Raised by Mr. H. Shoesmith, V.M.H.; introduced and sent by Messrs. H. Shoesmith Ltd.) **A.M.** August 29, 1955, as a spray variety for garden decoration. Plant 24 inches high, compact, bushy, erect. Flowers 1½ inches diameter, outer florets Tyrian Rose (H.C.C. 24/3), inner florets bronze-yellow. [20]

CHERUB. (Raised by Mr. H. Shoesmith, V.M.H.; introduced and sent by Messrs. H. Shoesmith Ltd.) **A.M.** August 29, 1955, as a spray variety

for garden decoration. Plant 30 inches high, compact, bushy, erect. Flowers 1½ inches diameter, outer florets near Magenta Rose (H.C.C. 027/1), inner florets near Magenta Rose (H.C.C. 027/1) tinged with bronze. [19]

(*b*) Dwarf

Pink

DEARIE. (Raised, introduced and sent by Messrs. J. & T. Johnson.) **A.M.** August 15, 1955, as a spray variety for garden decoration. Plant 20 inches high, compact, bushy. Flowers 1¾ inches diameter, outer florets Tyrian Rose (H.C.C. 24/3), inner florets Tyrian Rose (H.C.C. 24/3) tinged bronze. [18]

DAHLIAS

One hundred and eighty-seven stocks of dahlias were grown at Wisley in 1955. Sixty of these stocks were grown for the first time, having been selected during 1954 for trial at Wisley by the Joint Dahlia Committee of the Royal Horticultural Society and the National Dahlia Society.

The trial was inspected by the Joint Dahlia Committee on August 19 and September 9 and 23, 1955 and on its recommendation the Royal Horticultural Society and the National Dahlia Society have made jointly the following awards to dahlias as varieties for garden decoration after trial at Wisley. The number in brackets after the description of the variety was that under which it was grown in the trial.

Class VI C. *Medium-flowered Decorative*

BALLADE. (Raised, introduced and sent by Messrs. K. Maarse Dz. Jr., Uiterweg 32, Aalsmeer, Holland.) **H.C.** August 19, 1955. Plant 54 inches high, compact, erect, bearing flower stems 20 inches long. Flowers 6 inches diameter, Dresden Yellow (H.C.C. 64/1) overlaid Saturn Red (H.C.C. 13/1). [148]

IVORY QUEEN. (Raised, introduced and sent by Mr. L. A. Hoek, Clingendaal, Den Haag, Holland.) **H.C.** September 9, 1955. Plant 54 inches high, compact, erect, bearing flower stems 14 inches long. Flowers 7½ inches diameter, outer florets very pale cream, inner florets near Uranium Green (H.C.C. 63/2). [143]

LADY HUTCHINSON. (Raised by E. G. Butcher, Esq., 4 King George Avenue, East Grinstead, Sussex, and introduced and sent by Mr. Stuart Ogg, The Grove Nurseries, New Barn Lane, Swanley, Kent.) **H.C.** September 9, 1955. Plant 60 inches high, compact, erect, bearing flower stems 20 inches long. Flowers 6½ inches diameter, florets very broad, Orient Red (H.C.C. 819) flushed purplish crimson with tips of petals white. [103]

YELLOW SHOW. (Raised, introduced and sent by Mr. L. A. Hoek.) **H.C.** September 9, 1955. Plant 60 inches tall, compact, erect, bearing flower stems 18 inches long. Flowers 6½ inches diameter, a very clear bright yellow near Dresden Yellow (H.C.C. 64). [147]

Class VI D. *Small-flowered Decorative*

JESCOT NICOLA. (Raised, introduced and sent by Messrs. E. Cooper & Son, Jescot Nurseries, 388 Hatfield Road, St. Albans.) **H.C.** September 9, 1955. Plant 66 inches high, compact, erect, bearing flower stems 22 inches long. Flowers 4 inches diameter, near Yellow Ochre (H.C.C. 07). [111]

JESCOT POSY. (Raised, introduced and sent by Messrs. E. Cooper & Son.) **H.C.** September 23, 1955. Plant 63 inches high, compact, erect, bearing

flower stems 18 inches long. Flowers 3¾ inches diameter, white, tips of florets Mallow Purple (H.C.C. 630). [125]

Class VIII A. *Large-flowered Pompon*

BOB FINCH. (Raised, introduced and sent by Messrs. Brown & Such Ltd., Maidenhead, Berkshire.) **H.C.** August 19, 1955. Plant 60 inches high, compact, erect, bearing flower stems 18 inches long. Flowers 3¾ inches diameter, white flushed Mauve (H.C.C. 633/1). [177]

Class IX B. *Large-flowered Cactus*

VAMPYR. (Raised, introduced and sent by Messrs. K. Maarse Dz. Jr.) **A.M.** September 9, 1955. Plant 5 feet high, compact, erect, bearing flower stems 24 inches long. Flowers 10½ inches diameter, Saffron Yellow (H.C.C. 7/2) overlaid Poppy Red (H.C.C. 16). [40]

MAÎTRE FARGETTON. (Raised, introduced and sent by Messrs. J. G. Ballego & Sons, Bloemhove Nurseries, Leiden, Holland.) **H.C.** September 23, 1955. Plant 60 inches high, compact, erect, bearing flower stems 24 inches long. Flowers 8½ inches diameter, Canary Yellow (H.C.C. 2/1) lightly flushed Maize Yellow (H.C.C. 607/2). [37]

Class IX C. *Medium-flowered Cactus*

AMBER AGE. (Raised, introduced and sent by Messrs. J. G. Ballego & Sons.) **H.C.** September 9, 1955. Plant 63 inches high, compact, erect, bearing flower stems 22 inches long. Flowers 7¾ inches diameter, at base of floret Dresden Yellow (H.C.C. 64/1) changing towards edge of floret to Brick Red (H.C.C. 016/2). [39]

CARNAVAL. (Raised, introduced and sent by Messrs. D. Bruidegom, Baarn, Holland.) **H.C.** August 19, 1955. Plant 66 inches high, compact, erect, bearing flower stems 18 inches long. Flowers 7½ inches diameter, deep bright shade of red, near Scarlet (H.C.C. 19), extreme tips of florets yellow. [57]

GOLDEN AUTUMN. (Raised, introduced and sent by Messrs. D. Bruidegom.) **H.C.** September 23, 1955. Plant 60 inches high, compact, erect, bearing flower stems 20 inches long. Flowers 6¾ inches diameter, Primrose Yellow (H.C.C. 601/1) heavily suffused Nasturtium Orange (H.C.C. 610/2). [150]

GOOD EARTH. (Raised, introduced and sent by Messrs. J. G. Ballego & Sons.) **H.C.** September 9, 1955. Plant 60 inches high, compact, erect, bearing flower stems 16 inches long. Flowers 7 inches diameter, Magenta (H.C.C. 27/1), at base of florets yellow. [155]

LADY ISMAY. (Raised, introduced and sent by Messrs. J. G. Ballego & Sons.) **H.C.** September 9, 1955. Plant 48 inches high, compact, erect, bearing flower stems 18 inches long. Flowers 7¼ inches diameter, outer florets Shrimp Red (H.C.C. between 616/2 and 616/1), inner florets Mimosa Yellow (H.C.C. 602/2). [137]

MINGLEPEN BETTY. (Raised, introduced and sent by Messrs. Ridgeon's Seeds, 63 St. Andrew's Street, Cambridge.) **H.C.** August 19, 1955. Plant 54 inches high, compact, erect, bearing flower stems 24 inches long. Flowers 7¼ inches diameter, outer florets Carrot Red (H.C.C. 612) changing to Rose Opal (H.C.C. 022/1) at tips, inner florets slightly brighter. [101]

MY PREFERENCE. (Raised, introduced and sent by Messrs. J. G. Ballego & Sons.) **H.C.** September 9, 1955. Plant 60 inches high, compact, erect, bearing flower stems 19 inches long. Flowers 7 inches diameter, Poppy Red (H.C.C. between 16/1 and 16). [58]

PALACE. (Raised, introduced and sent by Messrs. N. J. van Oosten, Laan v. N.Q., Indie 427a, Den Haag, Holland.) **H.C.** September 23, 1955. Plant 55 inches high, compact, erect, bearing flower stems 18 inches long. Flowers 6¾ inches diameter, creamy white, outer florets faintly flushed Pansy Violet (H.C.C. 033/3), inner florets at base greenish yellow. [144]

ROSE TENDRE. (Raised, introduced and sent by Messrs. de Ruyter Bros., Oegstgeest, Holland.) **H.C.** September 23, 1955. Plant 60 inches high, compact, erect, bearing flower stems 20 inches long. Flowers 7½ inches diameter, outer florets a very delicate soft pink near Fuchsine Pink (H.C.C. 627/2) getting paler towards the tips of the florets, inner florets slightly paler pink. [179]

TORNADO. (Raised, introduced and sent by Mr. L. A. Hoek.) **H.C.** September 9, 1955. Plant 53 inches high, compact, erect, bearing flower stems 16 inches long. Flowers 7½ inches diameter, outer florets Dutch Vermilion (H.C.C. 717/1), inner florets Dutch Vermilion (H.C.C. 717/1) flushed crimson. [55]

WHITE RAYS. (Raised, introduced and sent by Messrs. Dobbie & Co. Ltd., Edinburgh 7.) **H.C.** August 19, 1955. Plant 48 inches high, compact, erect, bearing flower stems 16 inches long. Flowers 6½ inches diameter, outer florets white, inner florets cream. [49]

Class X. *Miscellaneous*

ANDRIES WONDER. (Raised and introduced by Messrs. Andries de Spiegelaar and sent by Messrs. J. G. Ballego & Sons.) **H.C.** August 19, 1955. Plant 54 inches high, compact, erect, bearing flower stems 24 inches long. Flowers 10 inches diameter, florets slightly channelled, twisted, tips incurving, Canary Yellow (H.C.C. 2) at base of petal, streaked with Mandarin Red (H.C.C. 17) and edged with Roseine Purple (H.C.C. 629/1). [95]

Class XI. *Dwarf Bedding*

SWEET AUBURN. (Raised and sent by Mr. J. F. Barwise, Towneley Nurseries, Towneley, Burnley, Lancs. and introduced by Messrs. W. Westwell & Sons, Leigh, Lancs.) **H.C.** September 9, 1955. Plant 28 inches high, dwarf, compact, bushy, bearing flower stems 10 inches long. Flowers 4 inches diameter, near Tangerine Orange (H.C.C. 9/1), reverse, especially conspicuous in young florets, Scarlet (H.C.C. 19/1). [86]

BORDER CARNATIONS

One hundred and thirteen varieties of border carnations were grown at Wisley during 1955. Five plants of each variety were planted on October 26, 1955. The Joint Border Carnation and Picotee Committee of the Royal Horticultural Society and the British National Carnation Society inspected the trial on July 18 and 27, 1955, and on its recommendation the Royal Horticultural Society and the British National Carnation Society have made jointly the following awards to border carnations as varieties for the open border.

The number in brackets after the description of the variety was that under which it was grown in the trial.

SUNSTAR. (Raised by Mr. F. W. Goodfellow; introduced and sent by Messrs. F. W. Goodfellow Ltd., Valley Nurseries, Aldridge, Staffs.) **F.C.C.**

July 18, 1955. Described R.H.S. JOURNAL **78**, p. 30. (**C.** 1952, **H.C.** 1953, **A.M.** 1954). [68]

APPLEY BEAUTY. (Raised, introduced and sent by Mr. Geo. E. Toms, Appley Nurseries, Ryde, Isle of Wight.) **A.M.** July 27, 1955. Described R.H.S. JOURNAL **78**, p. 464 (**C.** 1953). [87]

COUNTRY LASS. (Raised by Miss R. Goodfellow, introduced and sent by Messrs. F. W. Goodfellow Ltd.) **A.M.** July 18, 1955. Described R.H.S. JOURNAL **80**, p. 286 (**C.** 1954). [54]

FIERY CROSS. (Raised by Mr. James Douglas, introduced and sent by Messrs. Allwood Bros. Ltd., Wivelsfield Nurseries, Haywards Heath, Sussex.) **A.M.** July 27, 1955. Described R.H.S. JOURNAL **78**, p. 464 (**C.** 1953). [29]

BIZARRE RUBENS. (Raised, introduced and sent by Messrs. Allwood Bros. Ltd.) **H.C.** July 18, 1955. Plant vigorous with stout stems 23 inches long. Flowers 2¾ inches diameter, freely produced, centre full, no scent; petals broad, entire, white ground, striped heavily with Cardinal Red (H.C.C. 822), striped lightly with Carmine (H.C.C. 21) and also slight streaking with deep pink; calyx strong. [77]

IRENE FROST. (Raised by Miss R. Goodfellow; introduced and sent by Messrs. F. W. Goodfellow Ltd.) **H.C.** July 18, 1955. Plant vigorous with stout stems 29 inches long. Flowers 2¾ inches diameter, freely produced, centre full, scent faint; petals broad, entire, Geranium Lake (H.C.C. 20/1); calyx strong. [31]

SUSSEX RADIANCE. (Raised, introduced and sent by Messrs. Allwood Bros. Ltd.) **H.C.** July 27, 1955. Plant vigorous with stout stems 26 inches long. Flowers 2¾ inches diameter, freely produced, centre full, scent faint; petals broad, entire, ground Carrot Red (H.C.C. 612/1) flecked and margined with Geranium Lake (H.C.C. 20/1); calyx strong. [69]

COTTAGE JEWEL. (Raised, introduced and sent by Messrs. Allwood Bros. Ltd.) **C.** July 27, 1955. Plant vigorous with stout stems 16 inches long. Flowers 2½ inches diameter, freely produced, centre fairly loose, no scent; petals broad, slightly fringed, ground apricot-yellow, splashed mauve and orange; calyx strong. [12]

CRIMSON STRIPE. (Raised, introduced and sent by Messrs. Allwood Bros. Ltd.) **C.** July 18, 1955. Plant vigorous with stout stems 23 inches long. Flowers 2¾ inches diameter, very freely produced, centre full, strongly scented; petals broad, entire, ground Scarlet (H.C.C. 19), slightly striped with deep crimson; calyx strong [93]

HORSLEY CRIMSON. (Raised by W. G. Ferris, Esq., 29 Ember Lane, Esher, Surrey; introduced and sent by Messrs. Lindabruce Nurseries Ltd., Freshbrook Road, Lancing, Sussex.) **C.** July 27, 1955. Plant vigorous with stout stems 28 inches long. Flowers 2½ inches diameter, freely produced, centre full, scent faint; petals broad, entire, a deep glowing red near Cardinal Red (H.C.C. 822/2); calyx strong. [113]

PIERRETTE. (Raised, introduced and sent by Messrs. Allwood Bros. Ltd.) **C.** July 27, 1955. Plant vigorous with stout stems 22 inches long. Flowers 2½ inches diameter, freely produced, centre full, scent faint; petals broad, entire, Empire Yellow (H.C.C. 603/1) edged with Geranium Lake (H.C.C. 20). [50]

RIPSTON ROSE. (Raised, introduced and sent by Messrs. J. & E. Galbally, Meadowside, Meadow Road, Ashford, Middlesex.) **C.** July 27, 1955.

Plant vigorous with stout stems 27 inches long. Flowers 2¾ inches diameter, freely produced, centre full, scent faint; petals broad, entire, a clear bright rose red near Rose Bengal (H.C.C. 25); calyx strong. [112]

GARDEN PINKS

One hundred varieties of garden pinks were grown at Wisley during 1955. Five plants of each variety were planted on October 22, 1954. The Joint Dianthus Committee of the Royal Horticultural Society, the British National Carnation Society and the Alpine Garden Society inspected the trial on June 27, July 7, 18, and September 14, 1955, and on its recommendation the Royal Horticultural Society, the British National Carnation Society and the Alpine Garden Society have made jointly the following awards to garden pinks as varieties for the open border.

The number in brackets after the description of the variety was that under which it was grown in the trial.

CASSER'S PINK. (Sent by Mr. R. S. Oatley, Bridge Nursery, Beddington Gardens, Wallington, Surrey.) **F.C.C.** July 7, 1955. Described R.H.S. JOURNAL 77, p. 419 (**A.M.** 1952). [25]

CRIMSON GLORY. (Raised, introduced and sent by Messrs. Lindabruce Nurseries Ltd., Freshbrook Road, Lancing, Sussex.) **F.C.C.** June 27, 1955. Plant vigorous, bushy habit; flower stems 12 inches long, slender, rigid; flowers 2¼ inches diameter, double, centre full, scent faint; petals broad, edges finely serrated, ground Chrysanthemum Crimson (H.C.C. 824/1) with bright rich shadings of red near Cardinal Red (H.C.C. 822) and Currant Red (H.C.C. 821/1); calyx fairly strong (**A.M.** 1950). [97]

ALLWOODII 'PRISCILLA.' (Raised, introduced and sent by Messrs. Allwood Bros. Ltd., Wivelsfield Nurseries, Haywards Heath, Sussex.) **A.M.** June 27, 1955. Described R.H.S. JOURNAL 80, p. 287 (**C.** 1954). [37]

BEAUTIFUL. (Raised, introduced and sent by S. J. Rudge, Esq., The Lodge, Radlett, Herts.) **A.M.** June 27, 1955. Described R.H.S. JOURNAL 78, p. 465 (**C.** 1953). [60]

DUSKY. (Raised, introduced and sent by Messrs. Allwood Bros. Ltd.) **A.M.** June 27, 1955. Described R.H.S. JOURNAL 76, p. 416 (**H.C.** 1951). [19]

FUSILIER. (Raised, introduced and sent by S. T. Byatt, Esq., Ivythorpe, Hanworth Road, Hampton, Middlesex.) **A.M.** June 27, 1955. Plant compact, dwarf habit; flower stems 3 inches long, slender, rigid; flowers 1½ inches diameter, single, scented; petals narrow, edges serrated, red near Rose Red (H.C.C. 724) zoned with deep crimson. [33]

GERTRUDE ELLIS. (Raised, introduced and sent by A. V. Ellis, Esq., 115 Sheffield Road, Warmsworth, Doncaster.) **A.M.** July 7, 1955. Described R.H.S. JOURNAL 78, p. 465 (**H.C.** 1953). [20]

ICEBERG. (Raised, introduced and sent by Messrs. Lindabruce Nurseries Ltd.) **A.M.** July 7, 1955. Described R.H.S. JOURNAL 80, p. 287 (**H.C.** 1954). [98]

SHOW BRIDE. (Raised, introduced and sent by Messrs. Allwood Bros. Ltd.) **A.M.** June 27, 1955. Plant vigorous, bushy, erect habit ; flower stems 20 inches long, slender, rigid; flowers 2¾ inches diameter, double, centre full, scented; petals broad, edges serrated, a very clear shade of pink near Venetian Pink (H.C.C. 420), zoned Porcelain Rose (H.C.C. 620); calyx strong. [82]

WHITE INCHMERY. (Raised by R. Evershed, Esq.; introduced and sent by T. T. Burnett, Esq., 18 Penn's Road, Petersfield, Hants.) **A.M.** June 27, 1955. Described R.H.S. JOURNAL **80**, p. 287, under the incorrect name of 'Inchmery White.' (**C.** 1954). [2]

ALLWOODII 'CONSTANCE.' (Raised, introduced and sent by Messrs. Allwood Bros. Ltd.) **H.C.** July 7, 1955. Plant vigorous, bushy, spreading habit; flower stems 20 inches long, slender, fairly rigid; flowers 2 inches diameter, double centre full, scented; petals broad, serrated, very pale pink, laced and zoned Carmine Rose (H.C.C. 621); calyx strong. [52]

DAINTY MAID. (Raised, introduced and sent by S. T. Byatt, Esq.) **H.C.** June 27, 1955. Plant compact, dwarf habit; flower stems 3 inches long, slender, rigid; flowers $1\frac{1}{16}$ inches diameter, single, faintly scented; petals broad, serrated, Fuchsia Purple (H.C.C. between 28/2 and 28/1), white margins and zones of crimson; calyx strong. [32]

ELIZABETH. (Raised, introduced and sent by S. T. Byatt, Esq.) **H.C.** July 7, 1955. Plant compact, dwarf habit; flower stems $3\frac{1}{2}$ inches long, slender, rigid; flowers $1\frac{1}{2}$ inches diameter, double, scented; petals broad, serrated, Fuchsine Pink (H.C.C. between 627/3 and 627/2), zoned at centre with Garnet Lake (H.C.C. 828); calyx strong. [31]

FRECKLES. (Raised, introduced and sent by Messrs. Lindabruce Nurseries Ltd.) **H.C.** July 7, 1955. Plant vigorous, bushy habit; flower stems 9 inches long, stout, rigid; flowers $1\frac{5}{8}$ inches diameter, double, centre full, scented; petals broad, fringed, cut, Camellia Rose (H.C.C. 622/2) flecked and spotted with scarlet; calyx strong. [99]

ALLWOODII 'CAROL.' (Raised, introduced and sent by Messrs. Allwood Bros. Ltd.) **C.** July 7, 1955. Plant vigorous, bushy, erect habit; flower stems 20 inches long, slender, rigid; flowers $2\frac{1}{4}$ inches diameter, double, centre full, scent faint; petals broad, edges serrated, a clear shade of pink near Camellia Rose (H.C.C. 622), slightly deeper colour in the centre of the flower; calyx strong. [49]

BOOK NOTES

"Camellias in America." By H. Harold Hume. xvi + 422. Illus. (J. Horace McFarland Co., Pennsylvania, U.S.A.) $25.50.

Of acknowledged authorities on the subject of camellias in America there is surely none greater than Dr. Hume, whose knowledge of the genus is not bounded by that continent. The advent of the revised edition of his book on this subject not only adds a very attractive volume to our bookshelves but also brings us up to date with the further study made by the author during the nine years which have intervened since this work was first published.

The revised edition, which adds 82 pages to the text of the previous publication, is of special interest to us because we find in it traces of the author's visits to this country in the several references to camellias, gardens, and growers in England. But the book is, of course, primarily for American readers and if we read the chapter on diseases and pests we are cheered to find that we are excused most of those which appear devastating there: there is, however, no mention amongst the latter of the tom tits whose depredations we here have to endure.

As would be expected Messrs. J. Horace McFarland, the publishers, reach the highest standard of excellence in the sixty-five colour illustrations which the new edition contains, and although in one or two instances we may not wholly agree with the colours, which, as the author states, are affected by the light in which the flowers are viewed, the background by which they are surrounded, the age and condition of the blooms and other environmental conditions, they cannot fail to be of great help

in the identification of some at any rate of the increasing number of hybrids and forms, especially of *Camellia japonica* and *C. sasanqua*; while the varied backgrounds chosen for the colour plates offer a lesson in themselves.

The paper used for the colour printing as well as that used for the text is of excellent quality, as also is the printing, while the binding makes the 568 pages—if those containing colour plates are included—pleasant to handle and easy to read.

G. H. JOHNSTONE

"The Unheated Greenhouse." By Deenagh Goold-Adams. 176 pp. Illus. (W. H. & L. Collingridge Ltd.) 18*s*.

Mrs. Goold-Adams' delightful book has much to recommend it although we may not agree with all the advice given. It should do much to help and encourage the amateur with a cold greenhouse since it is written with authority and clearly from wide practical experience and expert knowledge.

The introductory chapters deal in an interesting way with equipment and cultural operations. Then follow short and charmingly written chapters on bulbs, ferns, cacti, annuals, etc., and finally an alphabetical list of plants with descriptions and cultural instructions which reveal much careful thought on a discriminating selection of plants and facts about them which both instruct and interest. No two gardeners would agree with all the plant selections but this is as it should be; nor with all the facts about their culture.

Pelargoniums, for instance, and some of the cacti described and illustrated will not tolerate a cold house in winter. It is a pity they have been so emphasized as suitable plants for this purpose.

Cultural operations are clearly given, but the novel way of ventilating a cold glasshouse is too simple to be believed and few gardeners would have had the courage to recommend it.

I am glad to see Mrs. Goold-Adams recommends John Innes Composts to amateur gardeners and gives such accurate instructions for making them. But I hope in future editions the following points will be corrected: John Innes Composts do not become toxic if left dry; the John Innes Base is not a satisfactory dry feed, and potassium nitrate is not preferred to potassium sulphate in the composts. These small points, however, can easily be corrected in future editions.

The book is well printed, beautifully illustrated and written with authority and charm. It can be recommended to the ever-increasing number of amateur gardeners who have a cold glasshouse and wish to get the most from it.

J. NEWELL

"Some Beautiful Indian Trees." By E. Blatter, Walter S. Millard and W. T. Stearn. 160 pp. Illus. (Bombay Natural History Society.) Rs. 20 or 30*s*.

Blatter and Millard's well-known and popular book on *Some Beautiful Indian Trees* has been for long out of print. It was always much in demand, so that the publication of a second edition is bound to be most welcome. The Bombay Natural History Society, the publishers, are indeed fortunate to have been able to persuade Mr. W. T. Stearn of the British Museum (Natural History), to undertake this amended and enlarged edition, for he not only knows the species he is dealing with, but also brings the necessary scientific bias to his task.

There is one criticism of this book—for this Mr. Stearn cannot be held responsible—the plates are quite unworthy of it. Despite this, however, this book will be bought and enjoyed by many who live in or visit India.

N. L. BOR

"A Survey of the Agriculture of Kent." By G. H. Garrad, O.B.E., N.D.A. 232 pp. Illus. (Royal Agricultural Society of England, 16 Bedford Square, London, W.C. 1.) 21*s*.

Given the necessary interest and encouragement this book is the first of a series of county surveys which the Royal Agricultural Society of England hopes to publish on the pattern of farming at the turn of the half century. There is no need to stress how swift have been the changes in times, customs and practices during the last few decades, but perhaps there is a need to emphasize that such surveys are essential if the position at any time is to be set in a proper perspective of the past. The agriculture of Kent with its diversifications of conditions and systems is a wise first choice since such a survey can illustrate what is happening today in so many branches of the industry.

But the very complexity demands an authoritative approach and this the author has provided from his rich and intimate knowledge accumulated during a life-time of educational and advisory work in the county. The book contains chapters on the more general aspects, the regional systems of farming, the principal crops and stocks and the whole is supported by a proper complement of statistics, maps and references. All those who are interested in rural history and the kaleidoscopic interplay of time and agriculture will find this book both instructive and enjoyable.

G. E. BLACKMAN

"Cane Fruits." Min. of Agric. and Fish. Bulletin No. 156. iv + 29 pp. Illus. (H.M.S.O.) 2*s*. 6*d*.

This bulletin on cane fruits is one of the most useful to the grower of soft fruits to appear for some time. The text deals with raspberries, blackberries and hybrid berries in turn. It gives the latest information on planting, cultivation, pruning, methods of support, manuring, propagation, etc., and there are separate sections on machinery and implements, picking, grading and packing, and, of course, on pests and diseases. The illustrations are clear and well chosen.

"Scientific Horticulture." The Journal of the Horticultural Education Association. Vol. XI, 1952–54. 198 pp. Illus. (Hort. Ed. Assoc.) 14*s*.

The appearance of this journal is always welcomed by horticulturists for its numerous important scientific contributions to commercial horticulture and to the scientific gardener as well. Of particular interest in this volume is an illustrated glossary of terms used in pruning fruit trees. This has been prepared by the Horticultural Education Association Fruit Group and it should be invaluable to all growers of fruit. There is also an authoritative article on the selection of virus-free clones of plants in Britain. Five papers on various aspects of cherries and their production make interesting and useful reading, and are a logical sequence to articles on the soils of Kent and their origin, by B. S. Furneaux, and one on commercial horticulture in Kent, by A. D. Harrison and W. G. Kent. Practical problems dealing with tomatoes, potatoes, and cauliflowers have not been neglected, and there are many worthwhile articles on a variety of other important subjects.

LANNING ROPER

"Grow Cacti." By C. Marsden, B.Sc., A.R.I.C. 8vo. 172 pp. Illus. (Published by Cleaver-Hume Press Ltd., London, 1955.) 12*s*. 6*d*.

Yet another book on cactus growing has appeared; the present one is the first volume of a proposed series and deals with methods of cultivation. It contains much sound information but one cannot help feeling that the author is writing more as a chemist than as a horticulturist; the chapter on composts is long and detailed and the recommendation of as many as twenty-five possible soil mixtures for different genera of cacti is confusing to the amateur and, moreover, unnecessary in these days of John Innes Compost. Enthusiasm has gone even further in a chapter on Soilless Culture where the propping up of a mature cactus in coarse vermiculite and watering it once a month with the appropriate nutrient solution is put forward as a promising method of cultivation. Vermiculite has proved a good rooting medium for cuttings, but the fact that they need potting-on quickly has not been emphasized here, nor mention made of the usual practice of putting compost below the layer of vermiculite so that the roots, when formed, will not be starved.

Apart from this, the directions given as to position, potting, watering and propagation are sound and the classification of the Cactaceae is a useful addition. The book is well produced and very free from printer's errors; Gymnocalcium for Gymnocalycium appears to be an idiosyncrasy of the author. The book concludes with several useful lists and a glossary of botanical terms but no index. For anyone who is just beginning to grow cacti the idea that he should measure the pH value of his soil may be a little disturbing, but experienced growers who like experimenting will find here new suggestions that may appeal to them.

VERA HIGGINS

"Auxins and Plant Growth." By A. C. Leopold. 354 pp. Illus. (University of California Press and Cambridge University Press, London.) 1955. 37*s*. 6*d*. net.

The great advances that have been made in the study of plant hormones or auxins in the last two decades have created an imperative need for an authoritative review, not only of their applications in horticultural and agricultural technology—this has been admirably done several times—but more especially in the fundamentals of their

action. Dr. Leopold is himself a worker in this field at Purdue University and he has performed a valuable service in his exhaustive and analytical presentation of the history, technique, physiology and application of auxin research.

The book is divided into two parts. The first deals with the fundamentals of auxin action and begins with an attempt to clarify the confused terminology in this field. He rightly confines the use of the word *hormone* to those substances indigenous to the plant and capable of producing the effects characteristic of hormone action. He uses the wider term *auxin* to embrace not only the true hormones but also the synthetic substances possessing the power of directly modifying growth processes in a manner distinct from nutritional responses.

In a valuable chapter the author reviews the different techniques which have been used for the extraction and measurement of auxins, with details of their performance. The remainder of this part is a brilliant summary of the physiology of auxin responses, the chemical nature of growth regulators and the various theories of auxin action.

The second part, on auxins in agriculture, deals with all the varied applications of auxins but treated from the physiological viewpoint rather than that of the pure technology. He ends with a *cri de cœur*, regretting that so many plant physiologists have turned their attention to the applied fields of research, especially in auxin study, and pleads for an adequate programme of fundamental research.

The book is written for the postgraduate student and the research worker and will be found to be heavy going for one not well-versed in plant physiology and biochemistry, but there can be no doubt of its real value as a research manual. In a subject which is advancing so rapidly theories soon become out of date and it is to be hoped, and indeed to be expected from one so energetic as the author, that new editions will be forthcoming at regular intervals.

R. H. STOUGHTON

"A Treasury of American Gardening." Edited by John R. Whiting. 272 pp. Illus. in colour. (Flower Grower, The Home Garden Mag. and Doubleday & Co.) $7.50.

At first glance this might appear to be a picture-book, for it is filled with excellent photographs by some of the outstanding garden photographers in America as well as colour reproductions of the twelve Furber copper engravings, done in 1730, of the "Twelve Months in Flowers." The latter were originally designed as a guide to gardeners in their selection of flowers. But the text is of equal significance. Mr. T. H. Everett of the New York Botanical Garden has written an interesting survey of horticulture for the home in America today. Other excellent contributions include a gardener's story of the soil, by Montague Free, Gardens of America, progress in plant science, the kitchen garden month by month and the Garden Club story. All are highly informative, particularly to the average gardener in this country, who is peculiarly uninformed about horticulture in America. This book offers an opportunity to catch up on current trends in a delightful way.

LANNING ROPER

"The Bermuda Garden." Edited by Christine M. Whitney. 234 pp. Illus. with colour photos and drawings. (The Garden Club of Bermuda.)

This attractive book represents the concentrated efforts of the Garden Club of Bermuda over a period of years. The results certainly must be gratifying to its members, for a book has been produced which is attractive, readable and highly useful to the Bermuda gardener, as it provides real guidance on the practical problems of gardening. It gives in addition comprehensive lists of plants with information on their cultivation and propagation, always with an eye to climatic conditions. For the British reader it will be useful as an introduction to the flora and to the gardens of Bermuda and it will whet many a horticultural appetite. Some of the photographs are excellent, although on the whole the colour work is lacking in subtlety. There is one plate in monochrome of Bermuda Easter lilies growing in a vast stretch for all the world like a flowing white river of flowers which will have to be seen to be believed. Having seen it, one will read the accompanying article and then one will surely want to pack a bag.

LANNING ROPER

"Poulsen on The Rose." By Svend Poulsen, translated by C. Campbell McCallum. 147 pp. Illus. (MacGibbon & Kee.) 12*s*. 6*d*.

A scholarly book which will appeal to all rose specialists.

The chapter on "Wild Roses" gives a detailed account of over thirty representatives of the Genus *Rosa*, and describes briefly the part played, if any, by these old

roses in the production of our modern roses. The author also points out which of the wild roses produce the best hips for rose-hip jam or jelly.

Quite brief, but clear, descriptions of preparation of soil and planting are given. "Digging out two spits in depth and replacing with healthy clayey loam" may be a counsel of perfection but it can rarely be achieved in these days.

The author has definite views on understocks and seems to favour *R. canina* for H.T.s, *R. multiflora* for polyantha and climbers and *R. canina* or *R. canina* × 'General Jacqueminot' for standards.

In the chapter on "Cultivation" more guidance might have been given as to the best time to apply artificial manures and whether the quantities specified should be applied all at once or spread over a period of time.

The author is clearly an advocate of hard pruning, but it comes somewhat as a surprise to read "polyantha roses and hybrid polyanthas are pruned in essentially the same way as hybrid teas though preferably rather *short* than *long*."

The chapter on "Rose Propagation" is a masterpiece of clarity and the master-hand is clearly seen at work.

Altogether a pleasing book.

F. FAIRBROTHER

"Die Nadelgehölze." By Gerd Krüssmann. 304 pp. Illus. (Paul Parey, Berlin, 1955.) DM. 39.60.

Readers who are already acquainted with the author's earlier works *Die Laubgehölze* and *Die Baumschule* will expect the present book on conifers to conform to the high standard of comprehensiveness and accuracy attained by those works. They will not be disappointed, for about 1,300 coniferous species, varieties and cultivars are described, and the detailed text is supplemented by over 350 half-tone illustrations, diagrams and maps.

The short opening sections of the book supply an introduction to the morphology of the conifers including an admirable glossary of technical terms, and a systematic review of the Gymnosperms. There follows the most important part comprising detailed descriptions of the species and forms under an alphabetical arrangement of the generic names. A cursory inspection is sufficient to discover an orderly arrangement of the subject-matter; and a closer study reveals the inclusion of authorities, synonyms where such exist, places of origin, dates of introduction or raising, references to illustrations in other works, chromosome numbers where known, and finally, of great importance to the practical gardener, hardiness and merit ratings. Tabular keys to the identification of species and forms of the larger genera are provided.

The author has been especially diligent in compiling lists of garden forms, in some cases of surprising length. Under *Chamaecyparis lawsoniana*, for example, no fewer than 128 named forms are discussed.

The illustrations have been collected from many sources. Some show species in their natural habitats. Of these, stands of *Araucaria araucana* in a snow-clad Andean landscape, *Picea omorika* in Jugoslavia and *Widdringtonia dracomontana* in Natal, are particularly striking. Others are habit-pictures of cultivated specimens, and there are "close-ups" showing twig- and cone-characters.

At the end of the book there is a bibliography and an index of synonyms. The latter will be of considerable value, since a number of names unfamiliar to all but conifer specialists are used in the alphabetical section.

Herr Krüssmann has appropriately dedicated his book to the memory of Ludwig Beissner, to whose great *Handbuch der Nadelholzkunde* the present work is a worthy successor.

N. K. GOULD.

"Practical Horticulture." By James S. Showmaker and Benjamin J. E. Teskey. viii + 374 pp. Illus. in monochrome and colour. (John Wisley & Sons, Inc., N.Y.; Chapman & Hall Ltd., London.) 34s.

The authors, both members of the staff of the Ontario Agricultural College, Guelph, Ontario, have written a general book on horticulture which will prove more useful in the American market than the British one, for it is adapted to conditions in Canada and the United States. In the foreword it states that the book "has been written primarily for students of vocational agriculture and to meet the needs of gardeners for a reference text and a guide to the how, when and why of horticultural operations." It covers the very broad field of horticulture, including fruit, vegetables, flowers, bulbs, trees and shrubs, lawns, garden design and house plants. In my opinion it is too superficial in its treatment of some of these latter subjects to merit their inclusion, for many of the

statements are surely common knowledge of the vast majority of the readers for whom it was written. In the chapters dealing with fruit and vegetables the emphasis is largely on the commercial aspect and these chapters are more competent. The illustrations are plentiful and well chosen, the style of writing is lucid and the presentation well arranged.

LANNING ROPER

"Garden Roses." By Stanley B. Whitehead. 96 pp. Illus. (W. & G. Foyle Ltd.) 2*s*. 6*d*.

This recent addition to the Foyles Handbook Series is a well-written small book which should be of real value to the small grower of roses. It is simply and directly presented, with additional historical commentaries which add to the interest and readability. There are well-selected illustrations and diagrams showing how to plant, prune and bud.

"Soil Warming by Electricity." By R. H. Coombes. 116 pp. Illus. (Cassell & Company Ltd.) 10*s*. 6*d*.

This subject is of particular interest to the commercial market gardener but it has its practical application for the private grower who wants to be able to force flowers and vegetables. After an account of the history of soil warming Mr. Coombes considers the possible types of equipment and explores the problems of installation, maintenance, costs, etc. The chapter on soil fertility is a good one for it is general in its application. The second part of the book is devoted to the various varieties of fruits and vegetables, giving the best methods of soil warming for their successful cultivation and listing varieties which are best suited.

LANNING ROPER

"Field and Forest. An Introduction to the Lives of Plants." By Islay Manley. 92 pp. Illus. 4 pp. in colour. (The Batchworth Press.) 16*s*.

Mrs. Manley has acute powers of observation and these are reflected by her writing and her drawings. This book will be informative to the amateur who knows little about botany and should prove pleasant reading for those who enjoy descriptive writing about plants and the country where they grow. Perhaps at times Mrs. Manley's style is a little too descriptive for as so often happens with books of this type, too many adjectives creep into the descriptive passages, making the style less effective than in the narrational ones where physiological processes are explained with clarity and brevity. The drawings are well chosen for the text but are a little too soft in quality, partly due, no doubt, to the reproduction. I enjoyed this book and long to visit again the Wye Valley where the author lives.

LANNING ROPER

"Modern Mushroom Cultivation." By A. A. Richards. 96 pp. Illus. (W. H. & L. Collingridge Ltd.) 8*s*. 6*d*.

Mr. A. A. Richards, who has done much research at the Cheshunt Research Station and is now the nursery manager, has written a concise and highly instructive book on mushroom culture, which has become increasingly popular with amateurs and professionals as well. Today mushrooms are an important market crop and this book will be invaluable to all those who have an interest. It is well illustrated and is practical in its approach, telling not only the best methods of cultivation but outlining alternatives and evaluating the results. Much careful thought has gone into the preparation of this book, and having read it, I wonder why I too am not growing mushrooms instead of buying them. So various are the places of cultivation that almost anyone with the space can adapt, be it cellars, caves, glasshouses, frames, hen batteries, stables, lawns, etc.

LANNING ROPER

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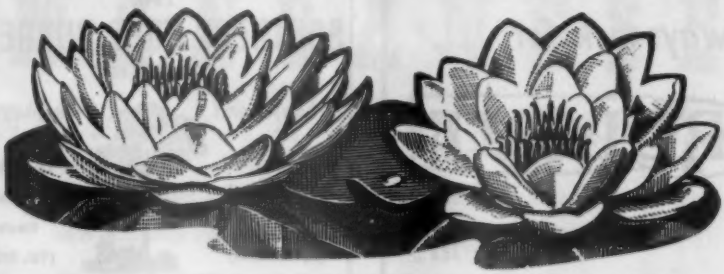

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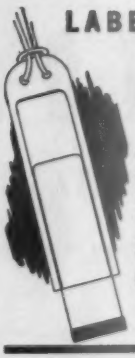

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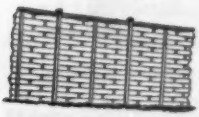

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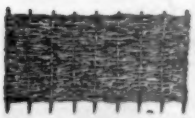

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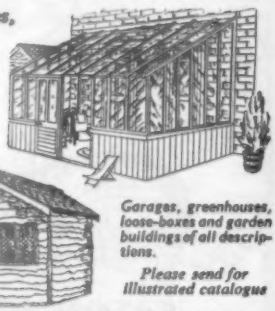

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